GOOD

MEDICINE

IN

BAD

PLACES

REFERENCE/HISTORICAL DOCUMENT

FISCAL YEAR 1998

"Public Law 92-426
established USUHS in 1972
to ensure continuity and
leadership for uniformed
medicine...USUHS has met
every goal and mission
envisioned by the founders
of this remarkable institution,
the West Point of
military medicine."

Congressional Record, House of Representatives, September 18, 1997.



UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

"'Not for Self, but for Country.' ... With responsibility comes many challenges. These challenges normally are translated into choices - a choice to operate, a choice for therapy, a choice to do nothing. But of all the choices you will face, there is none greater than the choice between self or selflessness ... rarely does a person develop a sense of selflessness in a single moment of time. Spontaneous, selfless acts rarely happen; instead, they are built on a strong moral foundation and then carefully layered by doing the right thing - time and time again."

General Charles C. Krulak, USMC, Commandant of the Marine Corps, Guest Speaker at the USU Graduation, May 16, 1998.

Table of Contents	<u>Page</u>

I.	THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)
	Governance
	Department of Defense Directs the Continuity of USU Restructuring of USU Governance Strengthens Strategic Oversight of USU Mission USU Board of Regents
	Strategic Planning
	USU Strategic Planning Process Reconfirms that the USU Mission, Vision, Guiding Principles and Strategies Conform with the Strategic Goals of the Military Health System (MHS) and USU's Establishing Legislation
	Mission Accomplishment
	USU Graduates Provide Continuity, Leadership, Dedication to Public Service and Academic Recognition
	Cost-Effectiveness
	The Products of USU Generate Cost-Effectiveness for the MHS
	OSD Recognition of USU's Multiple Products
	USU Participation with the Office of the Secretary of Defense during Fiscal Years 1997 and 1998 on Educational and Professional Development Surveys Results in Official Recognition of USU's Multiple Products
	Accreditation
	The Commission on Higher Education, Middle States Association of Colleges and Schools Approves USU Periodic Review Report Twelve Accrediting Entities Ensure that Educational Standards Are Met
	Organizational Culture
	Collaborative Efforts for a Diverse Community

	Office of the Brigade Commander
	- A Multi-Service Environment
	- Assurance of Operational Skills
	- Orientation Responsibilities
	 Minority Recruitment Efforts USU Color Guard
	March 23, 1998 Building Dedication to Honor David Packard
	Renovation and Upgrade of the Sanford Auditorium and Lecture Halls
	- Conformity of Design
	Learning Resource Center A Library That Never Closes
	 World-Wide Access Validated Information Access Process
	- Validated information Access Process - Internet Information Resources Added in 1998
	- Supplementing the Internet Resources Resource Stewardship
	- New Construction
	- Status of Actions Taken for New Construction
	- Requirements Identified for the New Construction
	- Allocation and Renovation of Space
	USU Receives Combined Federal Campaign Awards
	050 Receives Comonica reactal Campaign Awards
	Year 2000 Technology Issues
	Background
	Y2K Task Force
	Y2K Strategic Plan
	Status of Efforts
	- Biomedical Equipment, Medical Devices, and Scientific Laboratory Equipment
	- Other Equipment
	- Computers
	- Personnel Systems
	- College and University Financial System (CUFS)
	- Armed Forces Radiobiology Research Institute
	- Henry M. Jackson Foundation
II.	THE F. EDWARD HÉBERT SCHOOL OF MEDICINE
	Accreditation
	The School of Medicine (SOM) Program Accreditation Six Accrediting Entities Provide Quality Assurance
	Military Unique Curriculum
	General Overview
	First Year Curriculum
	- Good Medicine in Bad Places - Operational Emergency Medical Skills Course (OEMS)
	- U.S. Army Expert Field Medical Badge
	Second Year Curriculum

- Department of Obstetrics and Gynecology Successfully Initiated Video-teleconference	cing
for Clinical Clerkship Management - Pediatric Clinical Rotation - Exceptional Family Member Program	
Fourth Year Curriculum	3-24
USU SOM Curriculum Stresses Military Focus	
Curriculum Renewal	
Departmental Review	
Patient Simulator - A Collaborative Effort	
National Capital Area Military Medical Simulation and Readiness Center Initiative	
Telemedicine - USU Provides Essential Clinical and Technical Telemedicine Training within DoD 28	
Advanced Technology Training Telepresence Surgery System	
Travancea Teemiology Training Telepresence Surgery System	, 50
Retention	0-31
Retention Rates Ensure Leadership and Continuity for the MHS	
USU SOM Alumni Represent Approximately One Out of Every Five of all Active Duty Military Physic Current Leadership and Operational Statistics	ians
USU SOM Selection Process Ensures Exemplary Retention Rates	
Student Affairs	2-34
Class of 2002	
Office of Student Affairs	
- MS-I Structured Interviews	
- Sponsor Program	
- USMLE Step 1 Preparation	
- Third Year Clerkship Scheduling	
- GME-1 Planning Interviews	
- Graduate Medical Education Selection Board	
- Domestic Violence Seminar	
USU Military Medical Student Association Hosts a National Convention	
Alumni of the School of Medicine	5-44
General Overview	
USU SOM Graduates Earn Leadership Roles and Special Recognition Throughout the Uniform	med
Services	
- USU Army Graduates Selected for Promotion	
- USU Navy Graduates Selected for Promotion	
- USU Classes of 1980 Through 1996	
Selected Profiles of USU School of Medicine Graduates	2-44
Faculty of the School of Medicine	4-47
Composition	
Composition SOM Clinical and Consultative Services Generated an Estimated \$7.3 Million in Cost Avoidance for D)°D
Selected Profiles of USU School of Medicine Faculty	עטי

Research/Co	onsultative Efforts	47-61
Research Is D	Directed Toward Military Requirements	
Research Adr		
	idies Diseases of Military Relevance	
	lates to Combat Casualty Care	
	erational Medicine	
	of Medicine Department of Psychiatry and the Center for Traumatic S	Stress Consultative
_	Background	
_	Purpose	
_	Areas of Study	
_	Focus of the Center's Eight Laboratories	
_	Scope of Research/Consultative Efforts	
-	Educational Activities	
-	Preservation of Lessons Learned	
-	Recognized Resource	
USU School	of Medicine Department of Military and Emergency Medicine and the	Casualty Care Research
Center		51-53
-	Establishment and Mission	
-	Research	
-	Counter Narcotics Tactical Operations Medical Support (CONTO	MS) Program
-	Training	
-	Consultation/Operational Support	
-	Telernedicine	
	of Medicine Department of Preventive Medicine and Biometrics and the	
Medicine and	d Public Health	53-55
-	One of Seven Accredited Resources	
-	Graduate Education in Preventive Medicine	
-	Responsiveness to the Special Needs of the TriServices	
-	Centers for Preventive Medicine and Public Health	
-	Health Policies and Service	
	ment of Surgery's Center for Prostate Disease Research - A Successful	
Collaborative	ve Effort	
	ence on Military Medicine	
	rative Effort of the USU Neuroscience Research Program	
	ciplinary Graduate Education Program in Molecular and Cell Biology	
The Center 10	for Informatics in Medicine	
-	Instruction	
-	Software Development/Implementation	
-	Educational Support	
IICII Deceare	Educational Administration ch Day/Graduate Student Colloquia Program	50
	· · · · · · · · · · · · · · · · · · ·	
	from Medical and Clinical Psychology Has a Front-Line Role in DoD'	
	ork and Science Reveal a New Lethal Bacteria	
	chers from the Department of Medicine Document the Decline in Physical Control of the Physical Control of the Physical Control of the Decline of the Physical Control of the Physical Con	-
Calls		60-61

III. THE GRADUATE SCHOOL OF NURSING Establishment Mission Two GSN Programs Accreditation Granted by the Council on Accreditation of Nurse Anesthesia Educational Programs National League for Nursing Accreditation Preliminary Accreditation Granted by the American Association of Colleges of Nursing Sponsorship for the Honor Society of Nursing Is Granted Advanced Nursing Education in a Joint Service Environment The Selection Process Class of 2000 GSN Response to the Special Needs of the Uniformed Services Medical Readiness Training Adult Nurse Practitioner Post-Master's Distance Learning Program Clinical Instruction Thesis Research Patient Simulator/Realistic Training through Advanced Technology Innovative Teaching of Traditional Nurse Anesthesia Topics Pilot Distance Learning Project for Certified Registered Nurse Anesthetists Master of Science in Nursing Completion Program Background Electronic Access to Military/Uniformed Services Nursing Research The Science and Engineering Apprentice Program Graduate Profile **GSN** Outstanding Student Awards Composition

	Selected Profiles of Graduate School of Nursing Faculty
	 Uniformed Faculty Award Civilian Faculty Award
	Research/Consultative Efforts
	Prenatal Care: A Study of CONUS and OCONUS Military Women
IV.	GRADUATE EDUCATION PROGRAMS
	Background
	Predoctoral Graduate Programs Are Essential for Accreditation Graduate Programs Benefit the Military Health System The Development of Independent Scholarship Research Facilities Selection of Students Responsiveness to the Needs of the Services
	Accreditation
	Accreditation of USU Graduate Programs in Public Health Extended through December 31, 2003 Clinical Psychology Program Receives Accreditation
	Student Affairs
	19th Commencement - May 16, 1998 1998 Graduate Student Award Honorary Degrees General Charles C. Krulak, Commandant of the Marine Corps Air Force Brigadier General Vorley M. Rexroad Nobel Prize Winner Joshua Lederberg, Ph.D. Noted Surgeon David Sabiston, Jr., M.D. Class of 2002
	Alumni Affairs
	Selected Profiles of Graduates from the Graduate Education Programs Classes of 1988 through 1993
	Faculty
	1998 F. Edward Hebert School of Medicine Biomedical Graduate Educator Award
V. G	RADUATE MEDICAL EDUCATION
	Establishment and Mission

	National Capital Military Medical Education Consortium
	Administrative Office for the National Capital Military Medical Education Consortium Background
	USU Sponsored Fellowship Programs
	USU School of Medicine Primary Care Sports Medicine Fellowship Program The Fellowship Develops Clinical Competencies Needed to Diagnose and Manage Medical Illness and Injuries Related to Sports and Exercise USU Fellowship Consists of Five Major Rotations Additional Achievements in Graduate Medical Education The Department of Pediatrics
	Simulated Training for USU Graduate Medical Education
	Simulated Patients Provide Unique Training for Military Relevant and Combat Trauma Scenarios Simulated Operating Room
VI.	THE OFFICE OF CONTINUING EDUCATION FOR HEALTH PROFESSIONALS
	Nationally Recognized Continuing Education Credit
	Mission Unique Accreditation Within the Military Health System
	Increased Support for the Military Health System
	CHE Support for Graduate Medical Education Programs CHE Support for TRICARE/Health Affairs Initiatives Specialty and Review Courses Association of Military Surgeons of the United States (AMSUS) Annual Meeting
	Generated Cost Avoidance for DoD by CHE
	Support for Other Federal Organizations
	Department of State Conferences NASA Teleconference Continuing Education Series Collaboration with the Food and Drug Administration The Future
	Military Training Network
	Mission World-Wide Capabilities Essential to Medical Readiness MTN Generates Substantial Savings for DoD

VII.	THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE
	Establishment
	Background Unique Radiobiology Research Outreach 87-90
	Sharing of Research Findings - The Medical Effects of Ionizing Radiation Course Medical Radiobiology Advisory Team Research Thrusts
	 The Radiation Casualty Management Team The Biodosimetry Team The Depleted Uranium Team The Nuclear, Biological, and Chemical Interactions and Countermeasures Team Four Projects Reflect Defense Technology Objective Status
	Future Missions Realignment
	Committee Determines Realignment
APPE	NDIX A
	1998 Packard Lecture Program
APPE	NDIX B
	Selected Examples of Billeted and Adjunct Members of USU Departments and Programs Who Received Special Recognition During Fiscal Year 1998

I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

GOVERNANCE

Department of Defense Directs the Continuity of USU. In November of 1997, **William Cohen, Secretary of Defense,** determined that the University should remain open as part of the Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRIand moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense, to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD restored manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent.

Restructuring of USU Governance Strengthens Strategic Oversight of USU Mission.

Department of Defense (DoD) Directive 5105.45 for the Uniformed Services University of the Health

Department of Defense (DoD) Directive 5105.45 for the Uniformed Services University of the Health Sciences, in accordance with the established guidelines of its establishing legislation, directs that ...

"...the University shall place high priority on educating and training personnel to meet the combat and peace time medical needs of the armed forces..."

The University continued to meet its primary mission of ensuring continuity (preserving the lessons learned in military medicine) and leadership for the Military Health System (MHS) during Fiscal Year 1998. The expansion of the oversight role of USU by the three Surgeons General proved to be quite positive in terms of strategically identifying the ever-changing requirements of the MHS and evaluating how USU is currently meeting the needs of its primary customers, the Surgeons General.

USU Board of Regents. The USU Board of Regents is an advisory committee governed by the Federal Advisory Committee Act, the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5 105.45. Nine members of the Board are Presidential appointees and confirmed by the United States Senate. The Board also has several ex officio members. These include the Assistant Secretary of Defense for Health Affairs, the U.S. Surgeon General and the three military Surgeons General. The president of USU serves as a non-voting member. The Deans of the F. Edward Hebert School of Medicine (SOM) and the Graduate School of Nursing (GSN); the Commanders of the National Capital Area Medical Centers; the Commander of Wilford Hall United States Air Force Medical Center; and, commanders of several other military teaching hospitals serve as advisors to the Board.

Following their official appointments, three new ex officio members joined the USU Board in 1998: Dr. Sue Bailey, Assistant Secretary of Defense for Health Affairs; Admiral David Satcher, U.S. Surgeon General and Assistant Secretary of Health, Department of Health and Human Services; and, Vice Admiral Richard A. Nelson, Surgeon General of the Navy. General Thomas Morgan, United States Marine Corps (Retired), a former Assistant Commandant of the Marine Corps, continues to serve as the military advisor to the Board.

The Regents provide advice and guidance to the Secretary of Defense for the operation of the University. The Board's principal mission is to assure compliance with the University's appropriate accreditation authorities. The Board makes recommendations on obtaining the services of military and civilian professors, instructors, administrators and other employees necessary for the operation of the University. The Regents approve academic titles, as appropriate, for military and civilian members of the faculty. Additionally, upon the recommendation of the University's faculty, the Regents approve appropriate academic degrees to successful candidates. They recommend the establishment of postdoctoral, postgraduate and technological institutes, and programs in continuing medical education for military members of the health professions. The Regents also recommend reciprocal education and research programs with foreign military medical schools.

In their Annual Report for 1998 to the Secretary of Defense, the Regents indicated that the realignment with the Surgeons General will further facilitate the promotion of the University's capabilities within the military medical community and with the line commanders. The Board also recognized the importance of evaluating the University's products and services. To that end, the Regents assisted in developing outcome measures to better assess the strength, quality, and value of USU products and services. A subcommittee of the Board, chaired by **Lieutenant General Charles Roadman**, **Surgeon General of the Air Force**, worked on outcome metrics during Fiscal Year 1998.

STRATEGIC PLANNING

USU Strategic Planning Process Reconfirms that the USU Mission, Vision, Guiding Principles and Strategies Conform with the Strategic Goals of the Military Health System and the University's Establishing Legislation. Under the leadership of the USUHS President and the oversight of the Board of Regents, to especially include the three Surgeons General, USU continued a vigorous strategic planning review during Fiscal Year 1998. Updated mission, vision, guiding principles, strategic goals, strategies and metrics remained on the Internet for review for both relevancy and inclusiveness by the entire USU community. The USU Board of Regents actively participated in the continued development of metrics for assessing achievements. Throughout Fiscal Year 1998, there was extensive evaluation of strategic documents and major reports for conformity with the overall strategic plan of the MHS. The Surgeons General provided guidance and continuous support in their role as the primary customers of USU.

MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity, Leadership, Dedication to Public Service and Academic Recognition. The importance of pre-war and wartime knowledge of medical requirements was one of the significant factors that motivated both the Congress and the Executive Office of the President to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for military physicians. Public Law 92–426 established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces. USU was established to provide a cadre of military medical officers who would provide continuity and leadership to the MHS. With the graduation of its 19th class, 2,628 physicians have been granted Medical Degrees.

Currently, the 2,372 USU physicians on active duty in the Uniformed Services represent almost one out of every five physicians in the total MHS physician force (the congressional founders envisioned USU representation at ten percent). The overall retention rate for USU graduates is 92 percent; the retention rate for those USU alumni who have completed their service obligation and could leave active duty is 84 percent (Congress had originally envisioned retention rates close to 70 percent). The average USU graduate serves at least 18.5 years.

COST-EFFECTIVENESS

The Products of USU Generate Cost-Effectiveness for the MHS. In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, USU provides the following services to the MHS: 1) uniquely trained physicians in the practice of military medicine; 2) advanced practice nurses as required by the Federal Nursing Chiefs; 3) graduate education in the biomedical sciences; 4) support as the Administrative Office for the National Capital Consortium residency training programs; 5) continuing education and training for health care and related professions (estimated cost-avoidance in FY 1998 for the MHS was \$12.6 million); 6) special military/public health education programs; 7) applied and basic research; 8) consultative and archival services to DoD on health care and health care delivery in times of combat and contingency and humanitarian operations; and, 9) medical care for military beneficiaries provided by the USU clinical faculty in the course of teaching (over 136,000 hours of service during Fiscal Year 1998 at an estimated manpower cost of \$7.5 million).

2,169 Active-Duty Adjunct USU Faculty. The academic and research activities listed above contribute to the medical knowledge and technology base available to DoD. 2,169 active-duty, adjunct USU faculty members throughout the MHS collaborate in these academic and research efforts with USU. Through these collaborative efforts, USU serves as the Academic Center for those military medical officers who seek to advance their military careers and their knowledge of military medicine. All of these services/products are resourced as part of the operating cost of USU.

OSD RECOGNITION OF USU'S MULTIPLE PRODUCTS

USU Participation with the Office of the Secretary of Defense during Fiscal Years 1997 and 1998 on Educational and Professional Development Surveys Results in Official Recognition of USU's Multiple Products. In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an Office of Chancellor for Education and Professional Development.

Throughout Fiscal Years 1997 and 1998, USU participated in intensive surveys on streamlining education throughout DoD. Significant to the University, USU was allowed to provide inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; these responses included all of the services/productsresourced as part of the USU operating cost. These OSD-conducted surveys mark the first official/OSD recognition of the multiple products of USU beyond medical school graduates. During USU participation in the 1997-1998 surveys, OSD analysts, based on the average course length,

identified 188 student man years in addition to the 853 students in residence annually credited to the University.

During June and July of 1998, in response to Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted for use in the development of a blueprint for the Office of the Chancellor. Again, the Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU has the strongest academic certification and faculty credentials among all activities surveyed. University-wide faculty related totals provided to OSD reflect the following:

Full Time Faculty - 295

172 civilians and 123 uniformed officers

Adjunct Faculty - 3,374

1,205 civilians and 2,169 uniformed officers

ACCREDITATION

The Commission on Higher Education, Middle States Association of Colleges and Schools Approves USU Periodic Review Report. The University is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools (MSNCHE). The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received "candidate for accreditation status" from the MSNCHE in 1977, and has retained accreditation since 1983. In June of 1998, the Associate Dean for Medical Education coordinated the submission of the USU Periodic Review Report (PRR) to the MSA/CHE.

Following its review of the PRR, in July of 1998, the Middle States Association reported that USU "...has made significant strides ... The PRR is to be applauded for its serious and candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993. It is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future ... The move toward distance education is taking hold in education today, allowing a new approach to educating students. The Graduate School of Nursing is using this strategy to reach out to nurses. This should allow more students to participate in the program and actually increase enrollment ... The Dean (SOM) has already begun to integrate duplicate programs, develop new ambulatory care sites and revise the medical curriculum. All of these steps will assist the USU in staying ahead of some of the external forces ... The University's report shows evidence that faculty are actively involved in decision making at the University. Also, faculty members with national prominence have been recruited, and it is anticipated that research productivity will be enhanced. In only 25 years, the university manages approximately 450 research projects ... an outstanding record in such a short time ... It is clear that efforts have been made to increase the participation of faculty members from minority groups. Most noticeable is the increase in adjunct and visiting faculty from minority groups, and the appointment of minority faculty to several top positions. The Office of Minority Affairs is to be congratulated on its aggressive approach in understanding the various variables associated with the recruitment and retention of minority students, and for seeking out the assistance of Dr. Lonnie Bristow and General Colin Powell ..."

On December 1, 1998, the Middle States Association notified USU that its Periodic Review Report had been accepted as submitted and that the University's accreditation had been reaffirmed. The next evaluation visit is scheduled for 2002-2003.

Twelve Accrediting Entities Ensure that Educational Standards Are Met. In addition to the MSA/CHE accreditation, the following professional organizations continue to authorize accreditation for the University's schools and programs: 1) the Liaison Committee on Medical Education (LCME); 2) the National League for Nursing (NLN); 3) the Council on Accreditation of Nurse Anesthesia Programs (COA); 4) the American Nurses Credentialing Center's Commission on Accreditation; 5) the Commission on Collegiate Nursing Education (CCNE); 6) the American Psychological Association; 7) the Accreditation Council for Continuing Medical Education; 8) the American College of Healthcare Executives; 9) the Council on Education for Public Health; 10) the American Association for the Accreditation of Laboratory Animal Care (AALAC); and, 11) the Nuclear Regulatory Commission. Individual discussions on accreditation for the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided at sections II, III, IV, V, and VI of this report.

ORGANIZATIONAL CULTURE

"The USU will promote and maintain a diverse interdependent community of uniformed and civilian students, faculty, and staff responsive to the present and future needs of its internal and external customers."

Goal 5, USU Strategic Plan.

Collaborative Efforts for a Diverse Community. There were notable efforts throughout the University's Equal Opportunity Programs during Fiscal Year 1998. The Offices of Minority Affairs, Student Affairs, Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), the Brigade Commander, and Civilian Human Resources collaborated throughout the past year in order to recruit and maintain a diverse community. USU continues to seek ways to attract women and minority faculty, staff, and students to the University; many of these efforts are coordinated through the Office of Minority Affairs.

Human Resource Management Achievements Will Attract and Retain a Diverse Faculty and Staff. To attract qualified faculty and staff and at the same time meet the legislative requirement to provide comparable pay with that of the medical schools in the Washington, D.C. vicinity, it was necessary to replace the University's 1993 salary schedules. The USU Civilian Human Resource Office, under the direction of **Mr. Joseph A. Piemontese**, achieved considerable success in this area during the January through July timeframe of 1998. With the coordination and support of the Associate Dean for Faculty Affairs and the Faculty Senate, faculty salary comparability studies were completed with the Office of the Secretary of Defense (OSD); and, new salary schedules were agreed upon by OSD and the

USU President for both the School of Medicine and the Graduate School of Nursing. While budget restraints must always be addressed, management has now been provided with more flexible schedules with which to appropriately recognize promotions and merit increases. CHR was also successful in the resolution of concerns over the inclusion of allowances in the payment of benefits for the faculty and staff who hold administratively determined (AD) positions; payments were authorized by OSD, and then resumed by the Defense Finance and Accounting Service in July of 1998. Another achievement that has had a positive effect on USU's academic community is the successful request by the USU Civilian Human Resource Office (CHR) to expand the J-Visa program. In June of 1998, CHR received approval from the U.S. Information Agency to expand the USU J-Visa Program to include two new categories: Professors and Students. In addition, the CHR submission package earned re-approval for USU's overall J-Visa Program for another three years. And, finally, CHR has established a web page to provide world-wide access to faculty information on vacancy announcements, salary schedules, and benefits which will enable USU management to reach a diverse population in a cost-effective manner.

Cultural Awareness Festival. The USU and AFRRI Special Emphasis Programs, under the auspices of the USU Civilian Equal Employment Opportunity (EEO) Office, sponsored the annual Festival of Cultures during the first quarter of Fiscal Year 1998. **Ms. Susan Kidd, NBC Television News Anchor from Channel 4,** served as the festival's guest speaker. Ms. Kidd discussed the difficulties of growing up in an era of racial discrimination and how she overcame many obstacles to build her current successful career as a newswoman. She eloquently described how the tremendous support she received as a child from her family laid the foundation for her self-respect and confidence, so essential to her field of work.

The purpose of the Festival of Cultures is twofold: it allows the Special Emphasis Programs to display the many-faceted aspects of the proud heritage, historical accomplishments, and obstacles faced by the different cultures found in the USU community; and, it focuses specific attention on each represented group of people while celebrating the unity of the USU community. The Special Emphasis Programs at USU are: the Federal Women's Program; the Hispanic Employment Program; the Black Employment Program; the Program for People with Disabilities; the American Indian and Alaskan Native Employment Program; and, the Asian American/Pacific Islander Employment Program.

1998 Holiday Gathering. The USU and AFRRI Special Emphasis Committee's role was essential to the success of the USU 1998 Holiday Gathering. This year's festival included music, food, displays and entertainment which represented the diverse manner in which the holiday season is celebrated around the world. Each cultural display reflected a variety of costumes, artwork, cultural materials and information for the education and entertainment of the USU community as it recognized Kwanza, the Bangladesh Festival, the Three Kings' Day, Hanukkah, the Chinese New Year, Diwaldi and the traditional Christmas (which included a visit from Saint Nicholas). The 1998 Holiday Gathering captured the accomplishments, traditions, historical origin and proud heritage of the many cultures which merge to create the USU family.

Office of Minority Affairs. The USU Office of Minority Affairs (MAO) was established in 1991; its mission is to increase the participation and advancement of traditionally underrepresented minority and women students, faculty and staff at the University. The Office of Minority Affairs has established numerous programs to address the participation of USU in the Association of American Medical College (AAMC) Project 3000 by 2000. Examples of such activities include: 1) monthly recruitment trips are made to career fairs at undergraduate institutions, and to national and regional

meetings: to especially include liaison with the Military Academies; 2) the mentorship program has been expanded to serve all USU students (medical, nursing. and graduate); 3) MAO hosted 128 students during visits from the National Native American Youth Initiative and the National Hispanic Youth Initiative during June and July of 1998; 4) the establishment of MAO and EEO (both military and civilian) liaison to formalize coordinated efforts for promoting and maintaining a diverse, interdependent USU community; 5) a Cultural Awareness Workshop for the USU community; and, 6) MAO and the Student National Medical Association (SNMA) continue to staff the Helping Hands Community Clinic on a bimonthly basis.

The Helping Hands Proiect.

"Helping Hands reminds us that we are here to help people. It is an experience that you can store away for the future."

SOM Medical Student, Second Lieutenant Matt Hing, U.S. Army, Fiscal Year 1998.



Once a week. first and second-year medical students, USU physicians, and GSN nurse practitioner students find the time to provide medical care to low-income families in the Washington metropolitan area who do not have access to treatment. The students volunteer with the Helping Hands Project which consists of three clinics in Maryland run by the Mobile Medical Care, Inc. The clinics are located at the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring. and, the Adventist Community Center in Takoma Park. The three clinics provide services such

as physical examinations, laboratory analysis, management of acute and chronic diseases, mental health problems, general health education, and referrals for X-ray examinations, specialty care and secondary care.

The mission of the project is to ensure that people receive stable family health care when they would otherwise be unable to afford it. No one is turned away. As for the students, they become acquainted with available community resources and they learn about the health care needs of patients. USU students have many duties. They take patient histories and present them to physicians, give examinations, and generally observe what the attending doctors are doing. They treat patients with chronic problems such as hypertension, depression, arthritis, and diabetes and also see acute-care patients. Depending on the clinic, students see from six to fifteen patients during their three-hour shifts. Students are exposed to the overall population, people from different backgrounds who have different needs, with little ability to pay for services. Helping Hands developed into the program that it is today largely because of the vision of the first student organizer, **Ray Legenza** (now a Captain in the Air Force and a 1996 USU SOM graduate) and **Colonel Jeannette South-Paul, current Chair of the Department of Family Medicine**, first USU Vice President for Minority Affairs, and a current volunteer at the Takoma Park Clinic.

The Office of the Brigade Commander. The USU Brigade Commander is recognized as the "senior active duty officer" of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent services. In addition, the Brigade Commander makes certain that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the Leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Program, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The Brigade provides a clear chain of command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. Within the Brigade structure are the Commandants for the SOM and the GSN. The SOM has three company commanders (United States Army, Navy, and Air Force) assigned specifically for military training in officership and leadership; a United States Public Health Service officer who is currently a USU faculty member, provides this special training to the Public Health Service students. The company commanders are mentors for the students and they also deploy with them during each of the University's field training exercises. The uniformed faculty and staff at USU also conduct service-unique and combined inspections and military formations. Similar to the military academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and "command" roles.

Assurance of Operational Skills. The Brigade's operations department provides the planning, coordination, and logistical support for the major military field training exercises for the first and fourth year medical students (plans are now underway to include the GSN students in these exercises): January 1998 - Operation Bushmaster I-98 at Camp Bullis, Texas; June - July 1998 - Operation Kirkeshner, Quantico, Virginia; and, September 1998 - Operation Bushmaster II-98, Camp Bullis, Texas. Through training such as Operations Kirkeshner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to take a leadership role in military medicine (these events are further described in Part II, Student Affairs).

During the summer of Fiscal Year 1998, the USUHS Brigade Commander reported to the Board of Regents that the second year medical students had participated in the following activities: Army - U.S. Army Airborne School; Mountain Warfare School; the Army Surgeon General's Office; Operational Emergency Medical Skills; Expert Field Medic Badge; and, USA Operational Units; Navy - Diving School; Aerospace Medicine (USS Roosevelt); USN SEALS; Top Gun; Mountain Warfare Training; Amphibious Warfare School; Neuroanatomy Computing; USNS Mercy Hospital Ship; and, the USN Special Warfare Detachment; Air Force - Operational Emergency Medical Skills; Top Knife; Expert Field Medic Badge; Mountain Warfare School; and, USAF Hospitals and Research. These events directly contribute to USU's Strategic Goals 1 and 5. Specifically, the training and qualifications USU students complete during the summer contributes to the achievement of Goal 1, "to be recognized in the government and public sectors as the preeminent national leader in military and operational medicine." From qualifying for the Expert Field Medical Badge to conducting undersea medical research with the U.S. Navy SEALS, USU students are developing and maintaining the special skills required to take a leadership role in military medicine. Additionally, the diverse and exciting training USU students complete during summer training helps the University to accomplish Strategy 5.2, "to establish development programs that will make study, employment, and collaboration at USU attractive and rewarding."

The Brigade Headquarters Company is the enlisted support element for USU. The Company ensures that equipment, supplies, transportation, and personnel are positioned to accomplish the major field exercises. The Brigade maintains responsibility to ensure that the enlisted personnel at USU are proficient in their operational support skills.

Orientation Responsibilities. Another responsibility of the Brigade during the first quarter of the Academic Year covers the in-processing requirements for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs in the SOM. In the case of the 165 first year medical students, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the USU were stressed during the first week, as well as the students' responsibilities in their primary role as military officers.

Minority Recruitment Efforts. Strategic Goal 5, Strategy 5.2 calls for USU to "establish recruitment, development, and retention programs that will make study, employment, and collaboration at USU attractive and rewarding." Objective 5.2.1 specifically cites "ROTC and under represented communities" as focuses for these programs. The Brigade is reaching out to both of these communities. The Brigade Commander's membership on the Medical Advisory Selection Committee at West Point gives USU exposure to some of the top military academy students in the country. The Brigade's recruiting

efforts at the University of Arkansas also contributed to USU'sFiscal Year 1998 recruitment efforts for underrepresented communities.

<u>USU Color Guard.</u> Formal ceremonies have been an important element of military tradition since the earliest armies and navies went to battle. Whether at a retirement, change of command, or unit stand-up, the military goes to great lengths to showcase its commands, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies, and USU is carrying on that tradition, forming its own color guard in 1997. The USU Color Guard's first major performance occurred at the 1997 USU Graduation; it also presented the colors at the USU Brigade Change of Commander Ceremony. On May 16, 1998, the USU Color Guard brought the colors on stage during the commencement which was held at the National Society Daughters of the American Revolution Constitution Hall in Washington, D.C.; they were joined by two Marines who carried a ceremonial rifle (the symbol of security to guard the Nation's colors) and the Marine Corps Flag. The USU Color Guard, comprised of E-5 and below enlisted service members from the Army, Navy, and the Air Force, exemplifies the level of pride and dedication and the outstanding service USU provides to the Nation.

March 23,1998 Building Dedication To Honor David Packard. The University honored Mr. David Packard by renaming Building A as the David Packard Hall in a ceremony on March 23, 1998. During his career of dedicated service to the Nation, Mr. David Packard served as the Deputy Secretary of Defense from 1969 to 197 1. When the University was created following the passage of the Health Care Revitalization Act of 1972, the U.S. Senate confirmed Mr. Packard as the first Chairman of the USU Board of Regents, a position he held from May 1973 through October 1982. As Chairman, Mr. Packard orchestrated the immense requirements for designing and building the University campus. He was also instrumental in establishing both the initial membership of the USU faculty and staff, and the admissions process for the first class of medical students. Following the resignation of the University's first President, Dr. Anthony R. Curreri, Mr. Packard was named as Acting President from 1976 through 198 1. From 1984 to 1991, Mr. Packard was also the first Chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine. In recognition of his contributions to military medicine, he received an Honorary Degree in Military Medical Engineering at the USU Graduation Ceremony in May of 1994. Upon the announcement of his death on March 25, 1996, the Nation lost an incredible statesman and the University lost a significant member of its family. Mrs. Ruth **Spangenberg** represented the Packard family at the building dedication ceremony (see the first Section of the Appendix, the 1998 Packard Lecture, last page).

1998 Packard Lecture. Coinciding with the ceremony to rename Building A, Francis Moore, M.D., Moseley Professor and Chairman Emeritus of the Department of Surgery at Harvard University, delivered the 1998 Packard Lecture. Recognized as a pioneer in mass casualty advanced trauma treatment, Moore was a member of the USU Board of Regents from 1976-1983. He has been a member of the University's Visiting Board and a Surgical Associate since 1983, as well as a Consultant in Surgery to the Surgeon General of the Navy since 1981. The USU Faculty Senate established the Packard Lecture in 1985 to annually honor individuals who have made significant contributions to the

military medical community. It is considered among the greatest honors bestowed by the USU faculty. A copy of the 1998 Packard Lecture is included in the first Section of the Appendix.

Renovation and Upgrade of the USU Sanford Auditorium and Lecture Halls. The Office of Teaching and Research Support successfully coordinated a major renovation of the Sanford Auditorium and USU lecture halls during Fiscal Year 1998. The USU Multidisciplinary Laboratories (MDL), the Faculty Senate, and the Offices of the Deans and President were aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty and staff, an engineering design was commissioned to upgrade the equipment; the project was soon expanded to include the replacement of both carpeting and seating. This upgrade to the teaching facilities is in compliance with Goal 1 of the USU Strategic Plan; by upgrading the lecture halls and auditorium, USU has enhanced its ability to 1) provide a quality education to its students, faculty, and staff; 2) conduct continuing medical education; and, 3) to sponsor military medical conferences for the MHS.

Conformity of Design. All of the lecture halls were designed with the same equipment and controls so that instructors and students could learn one system and move from one lecture room to the next without readjusting to unfamiliar teaching tools. The new equipment will provide the faculty with a broader range of teaching tools to present their material. The project includes 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing in additional rooms throughout the campus; and, 4) "smart" classroom capabilities in Lecture Room C, to include video-teleconferencing and a state-of-the-art audience response system. A major portion of the construction took place during the summer of 1998; equipment installation occurred around class schedules through the coordination efforts of the Associate Dean for Medical Education and the Director of MDL. Future plans include similar upgrades to the Board of Regents Conference Room, selected conference rooms throughout the campus, Multidisciplinary Laboratories, and the Anatomical Teaching Laboratory which will increase interactive instruction.

The Learning Resource Center ... A Library That Never Closes.

World-Wide Access. Globally accessible over the internet, the USU Learning Resource Center (LRC) continues to respond to the information requirements of the USU students, faculty, staff, and alumni who are assigned throughout the Uniformed Services. This service is available over the internet 24 hours a day, every day of the year. Through the LRC home page, a proven source of "one-stop shopping," the LRC provides the electronic and traditional connections to assist uniformed and civilian customers in their various missions. Utilizing internet, fax, and other means of technology, the LRC customers receive dedicated and expeditious responses to their vital health sciences information requirements.

Validated Information Access Process. Since the establishment of its first internet presence in January of 1997, the LRC continues to diversify and update its resources to meet its customers' changing requirements. Before any information resource is moved to the production internet servers for customer access, thorough testing is conducted to ensure reliability and user-friendly access. On the developmental

server, the informational resource and user interface is tested by the LRC staff and selected customers to ensure useability. Revisions are made to the information access process as recommended during the evaluation process. This process enables the LRC to assist its customers on a one-to-one basis and to provide a validated, user-friendly environment.

Internet Information Resources Added in 1998. During the past year, the scope of the LRC internet services was expanded to provide the equivalent of a major medical library. Customers now have access to a one-stop information center, particularly those alumni located at remote sites where first-line patient care must be provided. The following additions were made during Fiscal Year 1998: 1) Books. Electronic editions of standard textbooks were added as soon as they became available. Currently, there are more than 40 books available through the LRC. These include such familiar titles as Harrison's Principles of Internal Medicine, Sabiston's Textbook of Surgery, Cecil's Textbook of Medicine, Conn's Current Therapy. Nelson's Textbook of Pediatrics, Merritts' Textbook of Neurology, Griffith's 5 Minute Clinical Consult, the Washington university Manual of Medical Therapeutics, the Harriet Lane Handbook, Campbell's Urology, and Danforth's Obstetrics and Gynecology. Books are also available which cover all of the major medical specialties such as: allergy, cardiology, dermatology, emergency medicine, endocrinology & metabolism, family medicine, general medicine, gastroenterology, geriatrics, infectious diseases, internal medicine, nephrology, neurology, neurosurgery, obstetrics & gynecology, oncology, orthopedic surgery, pathology, pediatrics, pharmacology, psychiatry, pulmonary medicine, rheumatology, surgery, toxicology and urology. All of these electronic editions are constantly updated and provide current information for the practice of contemporary health care; 2) Journals. Conversion to the electronic editions of health-related journals or periodicals continued throughout 1998. More than 300 titles were added to the internet production server for the LRC customers. Some examples of these additions include the following: all of the 130 titles published by Academic Press; 50 of the titles published through Highwire Press; the Ovid Journals collections which include 100 titles; and, the MD Consult which includes 48 titles. Specific titles include the American Heart Journal, Pediatrics, Journal of Clinical Investigation, EMBO Journal, Blood, American Journal of Physiology, Proceedings of the National Academy of Sciences, Circulation, Circulation Research, American Journal of Emergency Medicine, Neurology, Medicine, American Journal of Obstetrics and Gynecology, Annuals of Surgery, Chest, and Critical Care Medicine, and Medical Clinics of North America, Pediatric Clinics, Cardiology Clinics, Infectious Disease Clinics, Neurologic Clinics, and Surgical Clinics. All of the Yearbooks covering the various medical specialties were also made available; 3) Practice Guidelines. With the addition of MD Consult, over 500 Clinical Practice Guidelines contributed by more than 50 medical societies and government agencies are now available through the LRC; 4) Patient Education. More than 2,500 patient education handouts, which can be personalized to include special instructions provided by the attending physician or staff, are available; 5) Continuing Medical Education. There are more than 300 Continuing Medical Education (CME) Modules; each offers 1.5 Category I credits, for a total of 450 hours of Category I credits, which can be applied toward the American Medical Association Physicians's Recognition Award. The collection provides practical topical updates across eleven specialties of medicine. Each CME test is enhanced with links to related information contained in the electronic books, journals, practice guidelines, and drug information as well as to other web sites with relevant information; 6) Clinical Topic Tours. A new Tour is provided each week which allows the user to explore current thought and accepted wisdom on consequential topics in medicine. Establishing a path through a focused collection of information from journal articles, books, drug information, practice guidelines, educational materials and useful web sites allows the user to refresh his/hermedical knowledge; 7) Today in Medicine. This module allows the health care professional to stay informed about the newest developments in medicine. The module provides current developments from all of the major journals, government agencies, and medical conferences. Also provided are concise clinical summaries and add links to additional sources of information on the internet; and, 8) **In This Weeks Journals.** The health care practitioner can keep up with all of the major weekly journals through this module. Key contents of the major clinical journals (Journal of the American Medical Association, the New England Journal of Medicine, the Archives of Internal Medicine, Lancet, etc., are presented each week in an easy-to-scan format which includes concise article summaries.

Supplementing the Internet Resources. The registered number of users for the LRC remote internet services has grown to approximately 3,000 individuals. In planning for the electronic dissemination of information resources, the LRC has also been mindful of the printed information resources. A Reference Services Section has been posted on the internet production servers and currently contains an electronic request form for a mediated literature search as well as an electronic request form for an interlibrary loan for materials not owned by the LRC. Recently, the LRC installed a flat-bed scanner fax machine to facilitate the transmission of any critical information needs from its printed sources. To facilitate color copying and printing, a full-color imaging system became fully operational during 1998 and is available for use. The LRC continuously works to incorporate the recommendations of its customers in its efforts to provide quality and timely service to the USUHS community.

USU Strategic Plan, Goal 4, Strategy 4.1.3.

New Construction. Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open, as part of Program Budget Decision 711, the USU Vice Presidents for Administration and Management and Resource Management were directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus.

Status of Actions Taken for New Construction. On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU in Fiscal Year 2001 would eliminate leasing costs and was cost-effective. Following that determination, on March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command as follows: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design amount was \$15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remains on hold until the USU construction is approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package and that the Surgeons General would be required to identify funding from their Medical Construction Programs if the USU project were to be included in the DHP MILCON Program. In June of 1998, the Senate Committee for the Military Construction Appropriation Bill for 1999 urged "the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget." In December of 1998, the USU President resubmitted a request to Health Affairs requesting that the construction costs for the USU building be addressed as a separate entity and not be resourced from the limited construction budgets of the Surgeons General.

Requirements Identified for the New Construction. The new construction would provide classrooms, conference rooms, computer laboratories, department administration, instructor and staff offices in support of the Graduate School of Nursing, the TriService Nursing Research Program, Continuing Education for Health Professionals, the Military Training Network, Graduate Medical Education (to include the Administrative Office for the National Capital Consortium), the Office of Educational Affairs (to include both a simulation center and expanded registrar functions), the Preventive Medicine and Biometrics TriService Tropical Medicine Course and Masters of Public Health Programs.

Allocation and Renovation of Space. The President of USU and the Commander of the National Naval Medical Center signed a Memorandum of Understanding during Fiscal Year 1998 reference the gradual allocation of Building 53 to USU. The Building offers both laboratory (12 large laboratories) and administrative space. Memoranda of Understanding (MOU) were also completed with the USU President, the Stanley Foundation and the SOM Department of Psychiatry, through the coordinating efforts of the USU Vice President for Administration and Management (VAM); the MOU provides for a collaborative effort that will enhance the scientific and educational efforts of the University. Also during 1998, the Office of the VAM coordinated for new leased space in Silver Spring, Maryland; this newly renovated administrative space will temporarily accommodate the following activities: the Graduate School of Nursing, the Office of Continuing Education for Health Professionals, the Military Training Network, and Preventive Medicine until an additional building is approved, funded and constructed on the campus. As additional funds continue to become available, renovations are made in support of teaching activities. Also, during Fiscal Year 1998, with the approval of the University President, some 6,704 square feet of laboratory and dedicated research areas were renovated at a cost of \$680,000.

USU Receives Combined Federal Campaign Awards. Early in 1998, the University was informed that it had earned four major awards for its efforts during the 1997 Combined Federal Campaign (CFC). The President's Award was presented to USU to recognize an average contribution of at least \$150 per person and a participation rate of at least 75 percent. CFC officials reported that USU contributions averaged \$194.50 per person. The University's total contribution was more than \$153,000, 150 percent above the campaign goal. The Pacesetter Award is presented to an organization with at least a 2.2 percent increase in contributions over the previous year's total. The CFC recognized that USU had a 19 percent increase over its 1996 campaign. The Best Goal Poster award was also presented to the University President. Ms. Janet Rawls-Tull from the USU Audiovisual Center designed the poster that took first place in the National Capital Region's Communication Contest. USU also presented the best goal poster in 1996. And, for the second consecutive year, the USU Quarterly special CFC edition won first place in the National Capital Region. This tremendous USU community effort was coordinated by the Office of the Brigade Commander.

YEAR 2000 TECHNOLOGY ISSUES

Background. The "Y2K Problem" is the term used to describe the potential failure of technology prior to, on, or after January 1, 2000 due to the widespread programming practice of using two digits to represent the year in computer databases, software applications and hardware chips. Y2K-related difficulties will arise when the year is "00" and the system, database, application or chip is unable to differentiate it from the year 1900; or, it has been designed to quit operating at that point. Thus, software

and hardware built using two digit versus four digit date formats may not work across the 31 December 1999 to 1 January 2000 boundary. This problem has the potential to cause major malfunctions with any piece of hardware and software used during the processes of instruction or research at USU.

In January of 1998, the USU Vice President for Administration and Management was assigned responsibility for ensuring that USU would enter the next century without any major technical failures due to Y2K. The areas of responsibility include all information technology, software, biomedical, laboratory, and other equipment and systems at USU. In addition to mainframe and personal computers, the Y2K Problem could affect communications hardware and software (telephones, radios, voice-mail systems, facsimile machines, VCRs, teleconferencing equipment, etc.) and facility components with embedded microchips (air conditioning systems, sprinkler systems, elevators, security equipment, etc.).

Y2K Task Force. To define and develop a process for preventing Y2K Problems at USU, the Vice President for Administration and Management established a Y2K Task Force. The Y2K Task Force has two objectives. The first is to develop a plan for meeting Y2K; and, the second is to oversee the implementation of that plan. A consultant was hired to advise the Task Force and to coordinate its efforts. The primary membership of the Task Force consists of representatives from the University Information Systems (UIS), the Technical Services Branch of the Logistics Division (TSB), the Facilities Division (FAC), the Resource Management Information Office (RMI), the Civilian Human Resources Directorate (CHR), the Office of the Brigade Commander (BDE), the Armed Forces Radiobiology Research Institute (AFRRI), and the Henry M. Jackson Foundation (HE). In addition, the USU Vice Presidents for Teaching and Research Support and Resource Management participate with the Task Force as appropriate.

Y2K Strategic Plan. The Department of Defense and the General Accounting Office (GAO) both endorsed a five-phase approach for addressing the Y2K concerns: awareness; assessment, renovation (repair); validation; and, implementation with a contingency plan. The Y2K Task Force developed a draft Y2K Plan based upon the DoD and GAO recommendations and placed it on the USU web site for general review during April of 1998; revisions to the plan were completed and posted to the Web in July of 1998. The Awareness Phase took place throughout 1998 which included briefings to the President, the Board of Regents, the USU Senior Staff, the Faculty Council, and the Information System Coordinators. The Assessment Phase Activities were addressed during 1998 through the development of lists of potential problems. Renovation, Validation, and Contingency Plans were also developed during 1998.

Status of Efforts.

Biomedical Equipment, Medical Devices. and Scientific Laboratory Equipment. The Federal Drug Administration has established a World Wide Web site to provide information on the Y2K status of medical devices and scientific laboratory equipment (biomedical equipment). In addition, the Navy Medical Logistics Command of Fort Detrick has a master biomedical equipment database that provides similar data on items that are not compliant and the recommended solutions of the vendors. Between the two databases, TSB determined the status of almost all biomedical and laboratory equipment. TSB, with assistance from the RMI staff, established a database of Biomedical, Research and Laboratory Equipment

items that could be affected. The initial list was reduced from 16,500 records to 3.000. A wall-to-wall survey of equipment was completed by TSB during July of 1998. The manufacturers' information provided by the two databases allowed TSB to determine the status of most items; otherwise, individual manufacturers are being contacted by TSB. USU activities and departments will receive status information on all problem equipment during January of 1999, which will include work-around information, repair or replacement cost data. As of October 1998, the status of the 3,000 items is as follows: 2,119 items are no longer considered to be suspect; 526 items are compliant; 11 items will be compliant with work-wounds; 44 items can be repaired; 10 items cannot be repaired; and, 290 items are still being investigated. During January of 1999, USU activities and departments will prioritize "repair and replacement" decisions. Non-compliant items that can be continued in limited use will be permanently marked to indicate non-compliant status and limitations.

Other Equipment. The Facilities staff completed the Assessment Phase for "other equipment." No Y2K problems were identified for the utility meters, the air handling unit computer monitors, fire alarm system, elevators, clock timers, audio-visual equipment, facsimile machines, copiers, card readers, security systems (cameras and alarms), cafeteria cash registers, or vending machines. The Laboratory Animal Medicine security system was repaired. The USU Security Badging System will be transferred to a compliant software platform, if required, by June of 1999. The Defense Telecommunications Services of Washington has advised USU that the telephone switching system is not compliant but will be made so by the second quarter of Fiscal Year 1999. The electric company, PEPCO, has advised that it will be compliant by the summer of 1999.

Computers. An inventory and assessment of all hardware, off-the-shelf software, and in-house UIS developed applications were completed by UIS. Mainframe software certification was obtained from vendor web sites. All of the USU e-mail systems were migrated to a Y2K compliant system during 1998. New network hardware was purchased, with installation to be completed by the end of January 1999. An inclusive PC hardware survey and assessment was completed by the Y2K Task Force and administrative representatives from all USU activities and departments during September, 1998, which included Apple and other non-IBMmachines. Based on that assessment, USU leased 300 compliant PCs. Most noncompliant PC systems will be replaced by mid-January 1999 which will allow sufficient time for the following: training on the new software; all critical non-compliant databases to be transferred into compliant software; and, the date fields to be expanded and brought into compliance. Some noncompliant PCs must be retained, with work-arounds, to run laboratory equipment where the software requires the old system; such equipment will not be connected to the USU main systems. Temporary staff was hired by UIS to assist in the assessment and renovation of UIS developed software. Assessment has been completed for the majority of the UIS developed systems. Renovation efforts are also underway for several major systems. While USU began 1998 significantly behind the DoD recommended schedule, it finished the year in a position where the completion of most Y2K efforts can be achieved by January 2000.

Personnel Systems. The databases currently used by the USU personnel office are mostly Y2K compliant. The faculty database already includes a four digit year and is compliant; the training databases will be migrated to a new, compliant personnel system. Two major software systems that do not reside on USU computers, but which are accessed through the Internet have been identified as having a critical impact if not Y2K compliant: the Defense Civilian Payroll System (DCPS) and the Defense Civilian Personnel Data System (DCPDS). The Civilian Payroll System has been validated as Y2K compliant for the payment of USU personnel by RMI. The Defense Information Systems Agency (DISA) initially identified DCPDS as not being Y2K compliant and carried out the necessary steps to correct the problem.

DISA will release a new compliant system with Oracle development tools early in 1999. DISA also confirmed in November of 1998, that the interface with DCPDS and outside installations (to include USU) is Y2K compliant. Both of the external faculty retirement plans, TIAA/CREF and Fidelity, have confirmed that they are Y2K compliant.

College and University Financial System (CUFS). Renovation of the College and University Financial System (CUFS), USU's only COBAL system, was completed by the Resource Management Information Office (RMI). Interfaces with systems that share data have been worked out and tested in most cases. Testing of all interfaces will be completed as external organizations finish their Y2K renovations. Initial validation testing was completed during 1998. Operational use of the renovated software is scheduled for June of 1999.

Armed Forces Radiobiology Research Institute. The computer assessment has been completed by the Armed Forces Radiobiology Research Institute (AFRRI). There are some 200 PCs at AFRRI. By Y2K, all but a few lab systems will be Pentiums running Windows-95, and compliant. The primary software package (Microsoft Office) is Y2K compliant. AFRRI expects to have converted the older databases to Office, but in any case, they are already Y2K compliant. In-house software is mostly written in Microsoft Visual Basic, which is also Y2K compliant. The LINAC and Cobalt facilities are compliant. The reactor was determined to be non-compliant but will be upgraded in 1999; renovations of the nuclear reactor console, reactor network and maintenance modules, and the reactor LAN are under the supervision of the Commander of AFRRI, who is designated as responsible for the AFRRI nuclear reactor. AFRRI's Biomedical Maintenance Shop has submitted a plan of action for its 1,428 items requiring assessment to the Commander of AFRRI, and that plan has received approval. The AFRRI security access/monitoring systems and communication systems also require renovation for compliancy.

Henry M. Jackson Foundation. The HJF completed the replacement of all existing computer hardware and software attached to the Local Area Network with Y2K compliant systems by June 1, 1998 For other equipment such as security systems and fax machines, HJF contacted the manufacturers for compliance retirements. Most systems located at the HJF Headquarters are now compliant. CUFS Y2K upgrades were completed. The Human Resources/Payroll system is not compliant; replacement with an off-the-shelf system is already underway. The telephone system at Headquarters has been replaced. For offsite equipment, HJF staff extracted a list of equipment and software from the USU purchasing and grants database. Once a compliancy review has been completed, HJF will contact the appropriate project manager as to the identity and location of the non-compliant equipment. HJF will recommend either the upgrade or replacement of non-compliant equipment. Off-site research support equipment needs to be checked against the Federal Government and Fort Detrick databases to determine the manufacturer's compliance recommendations. Grantees will be notified by HJF of any equipment that is non-compliant and provided with recommended solutions. USU TSB has a list of all HJF-owned equipment that is located on the USU campus and only has concerns about a few items.

II. THE F. EDWARD HÉBERT SCHOOL OF MEDICINE

"The purpose of the medical school is twofold, first to provide a nucleus of career physicians in the Armed Services, and in the Public Health Services as well; and second, to provide a unique curriculum which, in addition to the traditional courses, would include those essential for military medical training, such as trauma, mass casualties, combat surgery, medical logistics, nuclear medicine, etc."

Report of the Committee on Armed Services, House of Representatives, on the Need for Continuation of the Uniformed Services University of the Health Sciences, June 15, 1977, page two.

ACCREDITATION

The School of Medicine (SOM) Program Accreditation. The Liaison Committee on Medical Education (LCME) accreditation process is designed to certify that a medical program meets prescribed standards, and by awarding accreditation, the LCME indicates confidence in the quality of the medical school program. The USU SOM first received accreditation from the LCME, a joint activity of the Association of American Colleges (AAMC) and the Council on Medical Education of the American Medical Association in 1979, and has maintained that status continuously to the present time.

The SOM received its last survey team visit and review by the Liaison Committee on Medical Education (LCME) in January of 1993. As a result of that review, in April of 1993, the LCME voted to continue full accreditation of the SOM for a seven-year period. The Liaison Committee on Medical Education (LCME) will next review the medical school program for reaccreditation in November of 1999. As a precursor to that review, the Associate Dean for Medical Education is coordinating an institutional self-study for the Dean, SOM. Self-study committees have been established, assigned topic areas, and charged to review and analyze portions of the Medical Education Database as well as other information considered relevant to their topic areas. Several months were allotted to complete data gathering, analysis, and report writing. Reports were then submitted to the steering committee on February 1, 1999, and will be reviewed by both the steering committee and a larger task force. The projected date for submitting data, self-study reports, and the executive summary to the Dean, SOM, is June 1, 1999. Following the Dean's review, these materials will be submitted to the LCME and survey team members for reference in determining the accreditation status of the School of Medicine.

Six Accrediting Entities Provide Quality Assurance. In addition to the LCME accreditation, the following professional organizations continue to authorize accreditation for the various programs and activities in the SOM: 1) the Accreditation Council for Continuing Medical Education; 2) the Council on Education for Public Health; 3) the American Psychological Association Committee on Accreditation; 4) the American Association for the Accreditation of Laboratory Animal Care (AALAC); and, 5) the Nuclear Regulatory Commission.

MILITARY UNIQUE CURRICULUM

General Overview. The School of Medicine (SOM) is a fully accredited medical institution, which provides a year-round, four-year curriculum. This cumculum is 174 weeks in length, approximately 20 weeks longer than the average curriculum of U.S. medical schools. This expanded curriculum focuses on epidemiology, health promotion, disease prevention, tropical medicine, leadership, officership, and combat casualty field exercises. Woven throughout the students' entire course of study, these and other subjects focus directly on the unique requirements of career-oriented military physicians. The USU SOM military unique training includes approximately between 784 and 889 hours of initial military education and medical readiness training compared to that provided to the Health Professions Scholarship graduates whose training ranges from 50 to 132 hours, depending on the Service" (General Accounting Office Report, "Military Physicians - DoD's Medical School and Scholarship Program," September 29, 1995, page 41).

USU represents a total military medical educational environment and acculturation process, providing career-oriented medical officers with the knowledge, skills and attitudes necessary to effectively work in joint service operations. The University's principal focus is on military medicine, which involves prevention of disease and injury; health promotion; and, diagnosis and treatment by medical personnel who are integral to the military operations they support. It also involves the syndromes and injuries that are either rare or unknown among nonmilitary populations. "Military Medicine" requires a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. The SOM, for example, provides its medical students with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. Additional knowledge in such areas as military medical intelligence, psychologic stresses of combat and trauma, the medical effects of nuclear, chemical, and biological weapons, and the medical effects of extreme environments - aerospace, undersea, tropical or desert conditions - are essential to a physician's ability to properly support a military commander's responsibility for troop fitness. Also critical to a military physician's focus is his or her ability to provide disease prevention and health promotion under many austere conditions.

First Year Curriculum. Four SOM Departments, Military and Emergency Medicine, Preventive Medicine and Biometrics, Medical History, and Psychiatry share the major responsibility at USU for teaching the military unique course material ... material that is not found in the curriculum of any other U.S. medical school. In addition to the usual first-year medical school courses, such as anatomy, physiology, biochemistry and human behavior, students at USU-SOM have required courses in military studies, military medical history, tropical medicine (diagnostic parasitology and medical zoology) and epidemiology, utilizing military data and case studies. This provides an introduction to the scope and content of military medicine and exposes each student to all of the medical systems within the Uniformed Services. Students are focused on the delivery of preventive and treatment services in the "field" or a deployed environment. By the end of the first academic year, each student has completed course work and experiences considerably greater than those required in the Basic Medical Officer Course for any of the Uniformed Services. The first academic year spans 40 weeks of instruction within the SOM, one week of operational medicine, and five weeks of military medical field studies.

Between the first and second year, all students participate in the required five-week course, "Military Medical Field Studies." This includes a ten-day field exercise focused on small unit leadership

combat survival skills, and military medicine at First Echelon (Unit) level, followed by a four-week, operational clerkship in an operational unit of their parent service performing duties appropriate to their rank. During this same period, twenty-five to thirty-five percent of each class will elect and successfully complete, one of the following military qualification schools: Basic Airborne Training; Basic Air Assault School; Survival, Evasion, Resistance, Escape (SERE); Underwater Operations (SCUBA); or, Expert Field Medical Badge (EFMB).

"We will establish and maintain a continuum of military medical education extending throughout the careers of uniformed health professionals that meets the joint medical readiness needs of the services and conforms to national standards."

Strategy 1.1, Goal 1, USU Strategic Plan.

Good Medicine in Bad Places - Operational Emergency Medical Skills Course (OEMS). The Casualty Care Research Center (CCRC) is a division of the USU School of Medicine's Department of Military and Emergency Medicine. The CCRC, created in July 1989, is staffed by military and civilian physicians and scientists within the Department of Military and Emergency Medicine. The center provides USU medical students and other medical personnel disciplined, educational training and research experiences in combat casualty care, injury epidemiology, trauma management and other related areas. The course, held seven times per year, teaches alternative methods to traditional medical practices in an out-of-hospital setting, often under austere conditions. USU's medical students attend the course for two weeks as part of their summer experience between the first and second years of medical school.

A compact ten-day course has been developed for DoD's special operations forces. Thirty-three of the military's elite special operations members, including Army Special Forces, Air Force Pararescue, Navy SEALS, and several foreign special forces military members attended one of the OEMs course during Fiscal Year 1998. (The Air Force is interested in incorporating OEMs as part of the training for medics who will deploy with the new force protection packages currently under development.) The course begins with *an* assessment of the general skill levels of the medics and corpsmen in attendance. The basic goals of the class are then discussed, most importantly, providing critical medical care during the first 72 hours after an incident. The course strongly emphasizes the differences between general pre-hospital care and operational medical support. **Pre-hospital care usually deals with blunt trauma, rapid response times, timely evacuation and virtually unlimited resources; operational medical support is generally the opposite.** It is characterized by penetrating trauma, longer evacuation times, austere environments and sparse medical supplies and equipment.

The curriculum introduces many situations unique to trauma medicine. Through studying the physiology of pain, responses to and relief from pain, the students receive instruction in local anesthesia, nerve block, and general anesthesia. Students also learn alternative invasive techniques for major airway blockage, and circulation management. The patient assessment portion of the course covers head injury, thoracic trauma treatment and immobilization techniques, such as casting. Suturing and wound management is taught with the help of Vietnam-era videos, relating closely to the purpose of the course. The students are introduced to telemedicine and the unique contributions it may have in remote treatment scenarios. The emphasis in the course is on "hands-on"training, which according to the students, provides extremely valuable insight into the theories behind classroom lectures. According to one SEAL corpsman, ..."... this is the only course that SEAL corpsmen need ... compared to this, the others are all academic. This teaches us what we need in the field, not in a hospital. I think this course should be part of all SEAL corpsmen's preparation for deployment ..." (USU Quarterly, Fall 1998, page 15). For more information

on the OEMS course, see the Department of Military and Emergency Medicine home page at: http://www.usuhs.mil.

U.S. Army Expert Field Medical Badge. During the summer of 1998, 23 SOM students competed for the U.S. Army's Expert Field Medical Badge at Fort Stewart, Georgia. USUHS students joined non-USU military medical members for the one week course which included intensive written and field examinations, physical fitness, survival, and emergency medical treatment tests. Other areas of the exercise evaluated were the evacuation of sick and wounded, a litter obstacle course, CPR, and a 12-mile road march carrying full field gear. The overall USU pass rate for the course was 48 percent compared to the overall pass rate of 16 percent for the total class.

Second Year Curriculum. During the second year, besides pathology, microbiology, pharmacology, ethics, human behavior, introduction to clinical medicine and physical diagnosis, students have additional hours of preventive medicine, including an introduction to operational (field) preventive medicine; health promotion in the military; physical fitness programs, policies, and implementation strategies; environmental and occupational health; and health services administration. The second year course in military studies focuses on two general areas: the science base for the practice of military medicine (wound ballistics, weapons effects, toxic hazards, and psychological stress) and the command and staff functions of military medicine in Joint Commands (medical planning, medical logistics, medical evacuation systems, and blood programs). The medical ethics course includes extensive material directly related to military medicine including the special concerns with sending soldiers back to combat, treatment of prisoners and civilians, and limitations imposed by the Geneva conventions. Other material stresses the resolution of hospital based ethical problems in federal institutions. The second academic year spans 35 weeks of instruction within the SOM. After final examinations, students prepare for the U.S. Medical Licensing Examination (USMLE) Step 1, which is the first of three examinations in the process of becoming a licensed physician.

Third Year Curriculum. The third year curriculum consists of clerkships in the principal specialties of medicine. Much of the instruction is provided by uniformed clinical faculty with an emphasis on teaching the special military relevance of the various clinical experiences. Of special note are the military clinical settings for instruction (military tertiary medical centers, military community hospitals, military outpatient ambulatory care clinics, and troop dispensaries on active military bases) and the patient population which includes active duty personnel presenting diseases and injuries incurred during both training and combat deployments.

USU medical students complete their third year clinical clerkships at 24 military hospitals, representing the entire spectrum of the Military Health System (MHS). The third year class of approximately 165 students has four required clinical clerkship rotations of six weeks each (Family Practice, Obstehics/Gynecology, Pediatrics, and Psychiatry); and, two clerkships that run for 12 weeks (Internal Medicine and Surgery) for a total of 990 third year rotations. Six of the USU SOM academic departments - Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry, and Neurology - use the Walter Reed Army Medical Center and the National Naval Medical Center as major clinical instructional sites. In addition, students also take clerkships at other teaching hospitals. The following teaching hospitals have established major affiliation agreements with the USU SOM: 1) U.S.

Army - Tripler Army Medical Center; Brooke Army Medical Center; Eisenhower Army Medical Center; Madigan Army Medical Center; and, William Beaumont Army Medical Center; 2) U.S. Navy - Portsmouth Naval Hospital; and, the San Diego Naval Hospital; and, 3) U.S. Air Force - USAF Medical Center, Keesler Air Force Base; USAF Medical Center, Wilford Hall; David Grant USAF Medical Center, Travis Air Force Base; USAF Medical Center, Malcolm Grow; and, USAF Medical Center, Wright-Patterson Air Force Base.

The Department of Obstetrics and Gynecology Successfully Initiated Video-teleconferencing for Clinical Clerkship Management. During 1998, the Department of Obstetrics and Gynecology successfully initiated a novel program utilizing video-teleconferencing for clinical clerkship management across its five sometimes distant sites. While there have been a number of programs in the United States using this technology for direct education purposes, to our knowledge, this is the first time an academic department of Obstetrics and Gynecology has used this technology for clinical clerkship management. The USUHS Ob-Gyn third year clerkship sites are located in Hawaii, Texas, Virginia, the District of Columbia, and Maryland, with an on-site coordinator at each location. By using video-teleconferencing on an end-ofclerkship basis, the coordinators successfully reduced the turn-around time for final grade submission for the medical students to only three weeks (a 60 percent reduction). The principal activity in these conferences is the critical evaluation of the performance of all medical students at all sites. A narrative evaluation for each student is generated at USUHS from the transcript of the conference, saving the local coordinators from having to individually carry out this often time-consuming task. Further, the evaluation process for each of the students has been standardized so as to assure that a student's performance in Texas is measured by exactly the same criteria as that used for a student in Maryland. Another major benefit has been the dramatically improved level of communication among all of the on-site coordinators together with the Department's Head of the Education Division and with the Department's Administrator. Satisfaction levels have been dramatically improved by all participants and by the Office of Student Affairs at USUHS. A preliminary report of this program was presented by the Department at the national Annual Faculty Development Workshop conducted by the Association of Professors of Gynecology and Obstetrics on January 11-13, 1999.

Pediatric Clinical Rotation - Exceptional Family Member Program. Third-year medical students on their pediatric clinical rotation are getting a new perspective on family care due to a rotation that sends them directly into the homes of parents who have children with special needs or disabilities. Every six weeks, a new group of USU students visit homes on an individual basis, integrating into the family for about two hours and learning about life with a special-needs child. The parents are the teachers in the non-clinical, interactive environment. USU works with the Bethesda-based Institute for Family-Centered care to provide the training. The Institute recruits, trains and supports parents to serve as faculty and advisers for the project. The parents develop a list of capabilities and behaviors for the students that goes beyond their basic medical knowledge. These include self-awareness, good communication, decisionmaking skills, and a professional attitude ... competencies that the parents feel characterize outstanding physicians. Medical conditions of the children include seizure disorders, Down Syndrome, cerebral palsy, cystic fibrosis, leukemia, juvenile rheumatoid arthritis, and severe multiple disabilities. The children range in age from pre-school to adolescence. Prior to their visit, the students are assisted in forming selfdirected learning goals; afterward, the students write a one-page paper about the strengths that they saw in the child and family and their own emotional reaction to the visit. The USU students are provided essential lessons about the capacity of families and the role of the physician.

Fourth Year Curriculum. The fourth academic year (approximately 165 students) begins with a one week Military Preventive Medicine Course. Early in the fourth year, students also take the USMLE Step 2. Twenty-eight weeks are spent in elective/selective experiences from a wide variety of clinical and research areas. Students must complete an eight week subinternship as well as the following four-week clerkships: Military Contingency Medicine, Military Emergency Medicine, and Neurology. The senior year concludes with a one-week Transition to Residency Course. As a part of their training and work as medical clerks, USU SOM third and fourth year students provide hundreds of thousands of hours of patient care-related services in these hospitals during each calendar year. Such services include examination of patients, providing post-operative care, organization and maintenance of the completion of the medical history and physical examinations of patients, assistance at surgery and delivery of newborns, and updating progress notes in patient records. These services, performed by USU medical students in a supervised setting, provide necessary and important support in the provision of competent medical care to the men, women, and children receiving treatment throughout the MHS.

In the fourth year, the Military Medicine Course places students in a simulated Joint Task Force where they participate as the medical staff for each of the component commands (Army, Navy, Air Force and Marine Corps). This scenario is carried into the four-week Military Contingency Medicine Course which focuses on medical support at first and second echelon levels (prehospital) for military forces deployed on combat, peacekeeping, or humanitarian assistance operations. Included is a five-day, continuous operations field exercise, "Operation Bushmaster," where students operate battalion aid stations and a medical company under simulated combat conditions while receiving multiple evaluations of medical unit leadership, preventive medicine and patient care, medical planning, and administrative and logistic skills. During the September 1998 iteration of Operation Bushmaster, the course curriculum incorporated deployable telemedicine for the first time. The Telemedicine Senior Systems Engineer at the Casualty Care Research Center, presented the instruction. Also for the first time at Bushmaster, Russian medical students participated in the exercise.

Military Emergency Medicine, one of the few required four-week emergency medicine clerkships found in all American medical schools, provides opportunities to utilize the skills in Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS) developed in the USU SOM Military Contingency Medicine Course. The USU SOM is the only U.S. medical school which requires these courses for all of its students.

A recent addition to the American Heart Association and Red Cross BLS curriculums is the automated external defibrillator. Advances in computer software and hardware have enabled the defibrillator industry to construct totally automated defibrillation capabilities for use during deployment. ACLS involves the identification of cardiac rhythm abnormalities, with guidelines for pharmacological and electrical interventions. ACLS training emphasizes the leadership skills needed to successfully perform resuscitation. The USU student must coordinate a team of individuals, provide cardiac rhythm interpretation, oversee BLS, administer the correct dose of medications and provide shocks at appropriate energy levels. Another training technology available to the USU medical students is the Actronic Machine. This resource is available in the USU Learning Resource Center and provides real-time, hands-on training and testing for BLS, including mannequins directly linked to a computer. The machine also provides training and practice for such ACLS disciplines as megacode (during which the student manages the first ten minutes of a cardiac resuscitation), rhythm recognition, heart and lung sounds recognition, and pharmacology and algorithm for ACLS reviews. Operated through a personal computer, this integrated system uses both laser disk and CD-ROM resources to provide real-time scenarios with realistic feedback.

Within the fourth year elective program, there are numerous opportunities for international experiences in both civilian and military institutions, attendance at U.S. Army and U.S. Air Force aviation medicine courses, and assignments to operational military units or military medical research activities. The Associate Dean for Clinical Affairs coordinates these international relationships.

USU SOM Curriculum Stresses Military Focus. In addition to the military unique curriculum, the USU SOM academic departments and faculty have structured courses to include: topics specific to military medicine and not covered in the traditional curriculum; and, teaching examples and cases drawn from military medicine. This content focus is reinforced by the fact that many of the faculty (one third of the billeted basic science faculty and two thirds of the clinical faculty) are uniformed officers of the Army, Navy, Air Force and the Public Health Service, who provide experience and contextual correlations to their teaching of traditional topics.

Curriculum Renewal. The SOM faculty conducted a complete review of the curriculum to more fully integrate the basic science and clinical areas of study. This review will not only help students in their basic science years, but during their third and fourth years as well, when they perform their clinical rotations in the DoD military teaching hospitals. The SOM Cumculum Committee is invested in supporting the cumculum renewal effort initiated by the Dean, SOM. Accreditation standards require that a medical school's curriculum be focused and current. It is recognized that the boundaries between many scientific enterprises in medicine have become less well-defined over the past decade, and therefore more emphasis has been placed on an interdisciplinary approach to curriculum content. The national trend has been to include more clinical science in the first two years and more basic science in the second two years of undergraduate medical education. The intent is to facilitate learning by talking about structure, function, and disease in an integrated way. This does not mean that individual department structure will disappear, but rather that a broader perspective must be given to curriculum design.

In February 1998, the Dean, SOM, charged the Curriculum Committee with reviewing the December 1997 Curriculum Review Report and executive summary produced in the second phase of curriculum renewal and the development of an implementation plan for curriculum renewal. This implementation plan is envisioned as an evolutionary process, with changes in the curriculum occurring in an incremental fashion. During Fiscal Year 1998, the Curriculum Committee completed a draft of SOM educational objectives which was reviewed by the Dean and has been distributed to faculty, students, and staff for comment. At the same time, a revised instruction on appointment, promotion, and tenure was approved. This document redefines scholarship, recognizing faculty contributions to education, and can be used as a reference in the Cumculum Committee's work involving teaching within the context of curriculum renewal.

The current draft of the cumculum renewal implementation plan includes five major areas of focus:

1) Development of Educational Objectives. A written set of objectives for the educational program is needed to satisfy accreditation requirements, which will also serve as a guide to reviewing the curriculum and instituting change, as appropriate. The resulting draft was, in part, based on the recent Association of American Medical Schools (AAMC) publication of educational objectives, and also

includes objectives which address the unique mission of the school. The draft was reviewed by the Dean and was distributed to faculty, students, and staff for comment.

- 2) Content Coordination, Integration, and Presentation. Efforts in this area will focus on sequencing of curriculum content, designing an interdisciplinary approach to topics where applicable, and identifying the most suitable teaching formats for different educational objectives.
- 3) Computers in Education. Efforts in this area will facilitate the continued integration of computer use into courses and clerkships.
- 4) Outcomes Measures. The focus of this area will include assessing the types of measures currently used to evaluate students and the exploration of other measures which might be used.
- 5) Faculty Development. The focus of this area is to improve teaching skills and foster educational objectives, particularly within the context of curriculum renewal. A draft outline was distributed to committee members regarding a process for the accomplishment of these focus areas. The outline proposes that departments be surveyed to collect relevant information and that the Curriculum Committee provide oversight for a number of subcommittees charged with accomplishing the work of the focus areas described above. Committee members will make recommendations regarding, and vote on, the implementation plan; make recommendations regarding the draft course/clerkship survey; and, identify chairs for the subcommittees. The renewal process will continue throughout Fiscal Year 1999.

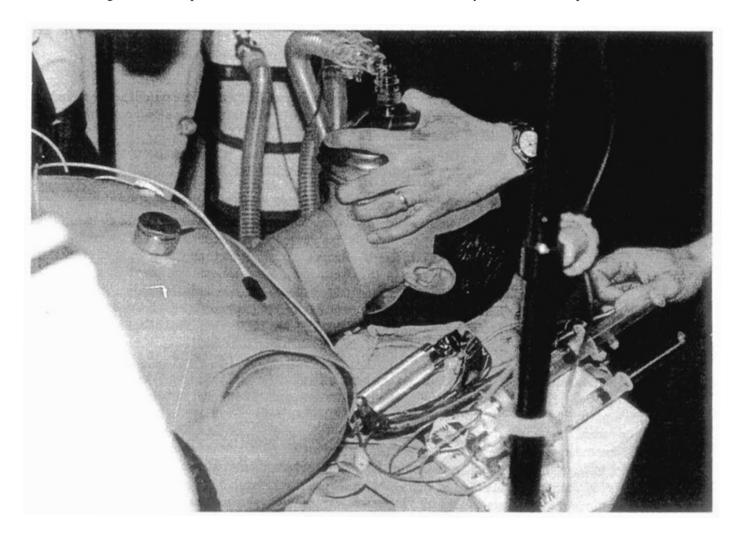
Departmental Review. During Fiscal Year 1998, the Office of the Associate Dean for Graduate Education drafted a policy memorandum for the Dean, SOM, to establish a mechanism for an internal review process by the individual SOM departments. The internal review process will be conducted approximately every five years, or when there is a change in chair status. The benefits derived from periodic departmental reviews are many: confirmation and/or assurance that the SOM's strategic goals are being met; documentation that the departmental education, research and service goals are accomplished; enhancement or revision of the department's program in an effort to meet specific goals and standards; and, the information can be used to respond to inquiries from accrediting bodies such as the LCME and the Middle States Association. The draft proposal was distributed for review and comment; coordination of the process will continue throughout Fiscal Year 1999.

Patient Simulator - A Collaborative Effort. A collaborative project between the National Naval Medical Center's (NNMC) Department of Anesthesiology and USU's Departments of Anesthesiology, Anatomy and Cell Biology, and Physiology has led to the development of a fully interactive medical training laboratory at USU. Commander Paul Pudimat, Medical Corps, U.S. Navy, USU Class of 1986, and Associate Professor of Clinical Anesthesiology at USU, led the effort to combine the resources of NNMC and USU and promote the interdepartmental use of advanced training technology.

The simulator is designed with more than 20 patient profiles, each with unique characteristics, including cardiovascular, pulmonary and metabolic attributes. There are currently over 35 customizable "events" ranging from anaphylaxis to ventricular fibrillation which can be assigned to individual patients. Instructors are able to select the type, severity and speed of a case and tailor it to match the ability of the

student; the instructor can then assess the clinical judgment, decision making, and performance levels of the student. A lesson can be "paused" to provide the instructor the opportunity to give the student feedback; and, clinical situations can be repeated until the desired level of performance is achieved.

The mannequin (simulator) can present a number of various medical problems and altered physiologic states. A certain scenario may incorporate any number of characteristics and complications including difficult airway management, cardiovascular conditions, allergic reactions, problems with equipment set-up and equipment failure. **The simulator presents scenarios applicable to combat casualty care, anesthesia, critical care, trauma, and emergency medicine.** The simulator is designed with an automatic drug recognition system, which allows for realistic drug administration. Drug models include intravenous and inhaled anesthetics, neuromuscular blockers, cardiovascular agents and a wide range of infusion pharmaceuticals which affect the simulator as they would a human patient.



The simulator's automatic drug recognition system creates a realistic response to model drug compounds administered to the mannequin. Each syringe is equipped with a unique computer chip which represents a specific drug.

The patient simulator is being used to train three primary groups at USU: medical students, graduate nurse anesthetists, and anesthesia residents (Graduate Medical Education). USU's medical students, during their third-year anesthesia rotation, are instructed in the basic fundamentals of anesthesia and the role of the anesthesiologist in surgery. They learn to connect a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation. For the first time, USU students combine the lessons learned about the physiology of gas exchange and physiologic and pharmacologic responses while actually performing the procedures and administering anesthesia, without putting a patient, or themselves, at risk.

The School of Medicine is now reviewing the extensive physiologic and pharmacokinetic models of the patient simulator for possible inclusion in the basic science curriculum during the first and second years of the medical program. If determined to be appropriate, the use of the simulated patient would add a clinical context to some of the physiology and pharmacology principles presented to the medical students.

"We will develop and constantly improve programs of the highest quality to expand and enhance the knowledge and understanding of military and contingency medicine as a special field of study."

Strategy 1.3, Goal 1, USU Strategic Plan.

National Capital Area Military Medical Simulation and Readiness Center Initiative. In response to new technologies, but also to the rapid downsizing of the inpatient teaching base, U.S. medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer based testing (CBT), distance learning, virtual reality applications, and clinical simulations using "standardized patient" actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are requiring new quality standards for medical education and testing. For example, the National Board of Medical Examiners has scheduled the implementation of CBT in the U.S. Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients will be implemented as part of the USMLE Step 2 in 2001.

These innovations in medical education conform with the 1995 DoD Medical Readiness Strategic Plan which states: "The use of modem technological advances such as computer simulations and virtual reality have potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training." In July 1995, the Dean of the USU School of Medicine and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the 1) development and use of military medicine databases for education and training; 2) simulation, teaching and measurement of patient interviewing, physical examinations and diagnostic skills; 3) instruction, assessment and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs was designated with coordinating responsibilities for the University.

Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC Forest Glen campus was identified and approved by the Commander of WRAMC as the location for the center. An initial design study, funded jointly by USU and WRAMC, was completed in September 1996. Two subcommittees subsequently prepared recommendations on

technology and annual cost estimates. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs, and the Surgeons General during a meeting of the TRICARE Readiness Executive Committee (TREC), who referred it to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen Building and the purchase of equipment. The one hundred percent design was completed on August 12, 1998. Funds for the renovation, furniture, and security were obligated on September 30, 1998. Program development and hiring of staff began in late Fiscal Year 1998 and will continue throughout Fiscal Year 1999. The construction for renovation is projected for completion by July 1999. The center is expected to be operational at the beginning of Fiscal Year 2000. Operation and maintenance (O&M) costs for the center are projected to be \$900,000 per year, once the center is fully utilized; however, these costs will be offset by the use of the center for USMLE testing and preparation time that would otherwise require additional resourcing and by the cost-effective use of the center for the provision of readiness training and distance learning throughout the MHS.

Telemedicine - USU Provides Essential Clinical and Technical Telemedicine Training within DoD. The Casualty Care Research Center (CCRC), a division of the School of Medicine's Department of Military and Emergency Medicine has taken significant strides in the field of telemedicine. More than two years ago, prior to the deployment of American Forces to Bosnia, telemedicine became a significant part of Army Medicine. Personnel from CCRC and Fort Dietrick, Maryland, developed the concept of deployable telemedicine for United Nations missions in Macedonia. Soldiers from Fort Dietrick expanded the effort by going into Bosnia with NATO forces to lay the groundwork for communication between the 212th MASH, the primary medical treatment facility for the American sector in Bosnia, and the combat support hospital in Hungary. At the same time, the staff of CCRC was at USU instructing all units that would be deployed to Bosnia and Macedonia. USU CCRC staff taught the clinical applications, techniques, and the medical and legal aspects of telemedicine practice issues. CCRC serves as an essential clinical and technical telemedicine training organization within the Department of Defense.

The four-day come, geared toward currently deployed telemedicine system users, fixed-site consultants, the telemedicine industry, and more recently, Army Surgeon General-mandated Medical Center Special Response Teams, teaches system design, equipment options and hands-on training, in addition to clinical applications, clinical techniques case studies and tissue labs.

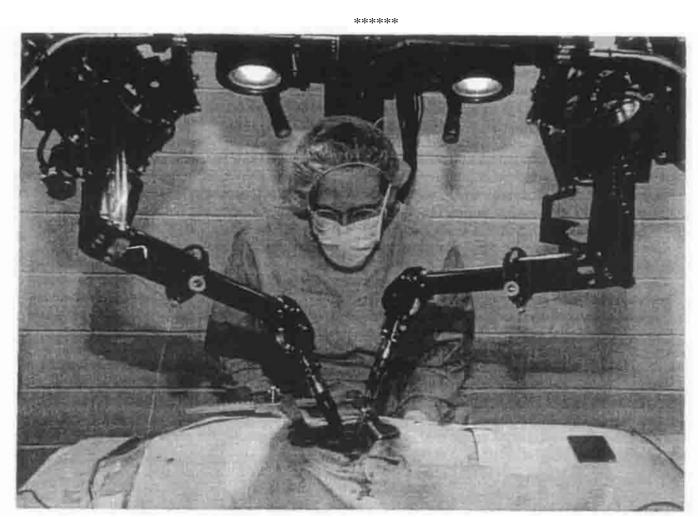
One technique included in the practice of telemedicine involves obtaining a digital image of a wound, lesion, or other suspicious medical condition and down-loading the still digital image, through a "store and forward" concept. The image is then sent to the appropriate medical care provider via e-mail. In a matter of minutes, a specialist can make a diagnosis and send back the recommended treatment, which can then be provided before evacuating the person from the remote location (and, in some cases eliminating the need for evacuation).

Telemedicine has also been introduced aboard the USS George Washington by CCRC staff. As a result, the Navy has increased its use of the telemedicine equipment by 100 percent. In conjunction with the National Naval Medical Center (NNMC), CCRC, and other DoD agencies, the dermatology field has seen an overwhelming number of cases; more than 90 teledermatology cases have come from the USS George Washington. During early 1998, CCRC staff had diagnosed four cases of melanoma using telemedicine and were able to diagnose and recommend a simple curative surgery on board. The patient

received immediate care and was saved from unnecessary testing; and, the Navy was saved the expense of evacuation and the loss of a crucial member of the shipboard team. A regionwide system is under development to tie in the NNMC, the Walter Reed Army Medical Center, and USU's Department of Dermatology. The system will be open to accept consults from all three locations.

To date, the USU CCRC staff has trained more than 400 personnel in the usage of telemedicine. They have taken the technology to Belize, Germany, Macedonia, Croatia, Bosnia, Saudi Arabia, and Ethiopia, where the Department of Defense was able to develop less costly and more portable systems through funding from the private industry. Telemedicine, in conjunction with NNMC and Walter Reed, supports 11 medical treatment facilities and 32 outlying clinics, as well as our deployed forces around the world.

Beginning with the September 1998 field training exercise, Bushmaster, all USU fourth-year medical students were fully trained in the use of deployable telemedicine.



Advanced Technology Training Telepresence Surgery System. Another USUHS School of Medicine Department that is utilizing simulation technology to present advanced training is the Department of Surgery. The Telepresence Surgery System (TeSS) has quickly gained recognition as an exciting

training tools. Two USU Class of 1982 graduates, Lieutenant Colonel Christoph R. Kaufmann, MC, U.S. Army, Chief of USU's Division of Trauma and Combat Surgery, and Lieutenant Colonel David Burris, MC, U.S. Army, Assistant Professor, Department of Surgery, have been working with the system since July 1997.

The remote surgery laboratory occupies two rooms at USU. One room houses the operator module, which consists of a color monitor, a liquid crystal shutter, used in conjunction with polarized glasses for stereo graphic viewing, a mirror to create a virtual work space beneath the hand-operated master controller, stereo speakers, and surgical instrument handles. The second room contains the romote, or surgical manipulator; the unit is comprised of two color CCD video cameras. This allows for interaction between the instructor and the students, or, for between the surgeon and the patient. The system's "arms" are controlled by small motors attached to each axis by gears, timing belts, and cables. The ends of the arms are equipped with interchangeable surgical instrument tips, providing force feedback which can be adjusted accordingly to represent the sensitivity of particular cases. As in flight simulator training, surgical simulation technology allows for proficiency testing in individuals. With the requirement for high levels of realism and sophisticated visual, audio and motion-based systems, the simulators can be used to rehearse, train, and develop new surgical procedures.

The TeSS has two clear uses, patient care, both local and remote, and surgical education. Current techniques, including laparoscopy and endoscopy, already place the physician at a distance from the operative area, using scopes, catheters, and video monitors for the remote manipulation of surgical instruments. Currently, the system is being primarily used for surgical education at USU. **Third-year medical students are introduced to the system as part of the surgical skills course curriculum.** The students perform as a surgical team in a "remote" environment. This simulation training provides a safe environment where students can rehearse and train in unique scenarios, without endangering themselves or patients. Although it may be ten years before USU graduates see the use of remote surgery on the battlefield, they can expect to see its impact in the operating room in the near future. **This remote surgery project, which has received regional, national and international media coverage, provides USU students an additional aspect of advanced training NOT available at other medical schools.**

RETENTION

Retention Rates Ensure Leadership and Continuity for the MHS. The SOM graduates 97 percent of those who matriculate, and more than 99 percent advance to the military services' Graduate Medical Education programs. The SOM has graduated 2,628 U.S. Army, Navy, Air Force and U.S. Public Health Service physicians since the first class graduated in 1980. Of these 2,628 alumni, 92 percent remain on active duty. Of those graduates who have completed their initial seven-year service obligation, 84 percent continue to serve their Nation.

USUHS SOM Alumni Represent Approximately One Out of Every Five of all Active Duty Military Physicians. Of the approximately 12,381 physicians on active duty in the Army (4,325), Navy (3,950), and Air Force (4,106) ... 2,372 of those physicians are USU graduates. These highly dedicated physicians are earning promotions at above average rates; they have become well-respected in their

medical specialties, and hold significant positions of leadership in areas of military medicine ranging from special operations and hospitals, to the White House and Bosnia deployments, and to assignments aboard ships at sea. SOM alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty members, retirees, and family members. These military physicians, and the thousands of other health professionals who have taken advantage of the numerous graduate and continuing education programs, are also carrying out USU's mission as the Nations's federal health sciences university.

Current Leadership and Operational Statistics. In January of 1998, of the approximately 1,431 USU graduates on active duty who were eligible to hold leadership positions, and were not in a post graduate educational status, 292 were serving as chairs, chiefs or heads of departments, directors of services, or program directors in military hospitals, clinics or centers. An additional 60 USU alumni were serving in operational assignments for the three military services. These 352 USU physician alumni currently holding significant leadership andor operational positions represent USU throughout the Military Health System. USU graduates from its first six Classes of 1980 through 1985, who remain on active duty total 408, of which, 41 percent hold leadership positions.

"'Not for Self, but for Country.'... With responsibility comes many challenges. These challenges normally are translated into choices - a choice to operate, a choice for therapy, a choice to do nothing. But of all the choices you will face, there is none greater than the choice between self or selflessness rarely does a person develop a sense of selflessness in a single moment in time. Spontaneous, selfless acts rarely happen; instead, they are built on a strong moral foundation and then carefully layered by doing the right thing - time and time again."

General Charles C. Krulak, USMC, Commandant of the Marine Corps, USU Graduation, May 16, 1998.

The USU SOM Selection Process Ensures Exemplary Retention Rates. Under the supervision of the Associate Dean for Student Affairs, the USU SOM selection process has been identified as one of the major factors in the success of the overall retention rates of the USU alumni. Because there are 18 applicants for each position, all candidates are carefully screened during the interview process to determine the following: 1) already recognized sensitivity for national, public, and/or community service, that clearly has the potential for enhancement in federal service; 2) the presence of natural and adaptable leadership skills already documented in a variety of organizations and circumstances; 3) an enthusiasm for supportive care-giving directed at individuals and groups, forming the basis for evolvement as a physician in the broad areas of medicine, and military medicine in particular; and, 4) a documented record of academic success that extends beyond the boundaries of any standard cumculum, as demonstrated through individual creativity, service, andor research. A recent Matriculating Student Survey conducted by the Association of American Medical Colleges (AAMC) showed that compared to the national group of matriculants, USU SOM candidates were more likely to select medicine as a career because of the opportunity to serve the community and to lead, and less likely to seek a medical career for purposes of prestige or high income.

STUDENT AFFAIRS

"Because I came from a military background, I'm used to working with people who watch each other's backs and keep the mission in focus. I expected to find the same here at USU, and that's what I did find in all aspects - faculty, staff, classmates and upperclassmen."

Army 2nd Lieutenant Jeff Robertson, former weapons sergeant, and member of the USU Class of 2002.

Class of 2002. During August 1998, the F. Edward Hebert School of Medicine matriculated its twenty-third class (the Class of 2002). 2,916 applicants representing all 50 states competed for 165 positions. There were 18 applicants for each position which allowed a diverse and highly qualified selection of candidates with a motivation toward public service. The demographics of the class are depicted as follows:

70 students (42 percent) were associated in some way with the military before USU matriculation. Of those,

44 students served previously on active duty in the military (24 as officers (of which 5 were officers who came from the Naval Academy (2), West Point (2), and the Merchant Marine Academy (1); and, 20 as enlisted);

25 came directly from commissioning programs (2 from the Naval Academy; 5 from West Point; 2 from the Air Force Academy; and, 16 were from Reserve Officer Training Corps (ROTC) detachments)

37 students (22 percent) are women;

35 class members (21 percent) are minority students (including 14 students from groups slassified as underrepresented in U.S. medicine).

The average age of the entrants at the time of application was almost 24.

The matriculants had a cumulative grade point average of 3.55 and a mean science grade point average of 3.51 which compared well with the 1998 national applicant pool average scores of 3.57 and 3.52. The average Medical College Admission Test (MCAT) scores for the USU class were 10.2 as compared to the average national matriculant score of 9.9 (the MCAT consists of four sections: verbal reasoning, physical sciences, biological sciences, and a writing sample). All members of the Class of 2002 hold Baccalaureate Degrees; seven hold Master of Science Degrees; and, one holds a Doctorate of Chiropractic Medicine. Forty-one percent of the enrollees majored in biology; 11 percent in biochemistry; and, 8 percent in various engineering specialties. Other disciplines in which the Class of 2002 holds degrees are math, chemistry, zoology, physics, microbiology, economics, and anthropology.

Office of Student Affairs. Throughout Fiscal Year 1998, the Office of Student Affairs (OSA) was engaged in personal and/or professional academic counseling and career guidance for the 660 students in the SOM. Beginning in September of each year, OSA conducts well over 300 formal interviews. This process begins formally with the Medical School (MS)-I post-matriculation interview of all 165 new

freshmen. Early in the MS-III year, a second formal interview takes place which starts the Graduate Medical Education (GME) -1 planning process.

MS-I Structured Interviews. The purpose of the MS-I interview is to engage each new medical student in a relationship with the OSA and the office staff who will manage their professional development and career guidance. The interview is open with an emphasis on the future partnership (or the individual management and consulting network) that will exist between each student and the three deans in OSA. The interview covers five areas: 1) Transition - the move to Washington, e.g., housing, getting settled, family issues; 2) Sense of Membership in the Class, e.g., within and between services, professional, social; 3) Sense of Professional Vision, e.g., vision for what will come after medical school; 4) Adjustment to Student Life, e.g., how are they managing the 24 hour clock; 5) Inquiry about Image, e.g., aside from roles of student, spouse, parent, athlete, what really defines them? Students are free to raise any questions, concerns or thoughts. The interviews require considerable time, but have definitely proven to be worth the effort for both students and OSA. These interviews set the stage for an ongoing dialogue with each student over the four years of medical school and for establishing a sense of community throughout the student body.

Sponsor Program. In February of 1998, OSA allocated sponsor assignments for the newly accepted students in the Class of 2002. Upon acceptance to USU, members of the incoming Class are individually matched with members of the current freshman class. First year students serve as the incoming students' sponsors; the student sponsor answers questions about housing, moving to Washington, family issues, military summer training, and many other topics. The student-sponsor relationship has proven to be a valuable tool in assisting the incoming students through matriculation.

USMLE Step 1 Preparation. During Fiscal Year 1998, OSA prepared the second year students for the United States Medical Licensing Examination (USMLE) Step 1 Board Examination which was held in June 1998. OSA provided class-wide presentations covering the fundamentals of the examination process, test preparation strategies, and test taking skills. Students also organized their own informal program which included mini-lectures on board relevant topics, meetings with select faculty, and group study sessions. In February, students took a six-hour "mock" examination which provided them with valuable feedback on subject area strengths and weaknesses. USU medical students took the USMLE Step 1 examination in June 1998 with a passing rate of 97 percent.

Third Year Clerkship Scheduling. Also during the February timeframe, OSA meets with the second year students to schedule third-year clerkships. To increase student input into the orchestration of their third-year clerkship schedule, OSA has moved from a system where students were simply given a pre-selected schedule of randomly assigned clerkships. The student now has the ability to place rotations of special interest in the first half of his/her junior year and the opportunity to experience potential career choices at an early point. In addition, the current system allows students to coordinate some of the required travel in their academic third year with personal events that may already be planned or anticipated. The staff of OSA conducted Round 1 clerkship selections for the Class of 2000 using randomly assigned numbers. During the second week of February, students met as a group and picked rotations for the remaining rounds. The students shared equally in opportunities for assignments of choice and expressed their appreciation for the new system.

GME-1 Planning Interviews. OSA conducts interviews with the third year medical students during the fall term. During the first few months of the academic year, OSA meets individually with the entire junior class to conduct fourth year planning. The hour-long meetings cover Graduate Medical Education

(GME) planning, specialty choice, interviews, and specific sequencing of senior rotations to maximize selection for residency of choice; again, available selections for senior year rotations exceeded the general expectations of the students. OSA arranges program schedules that enhance student growth, professional experience and individual preferences. A major product of this process is the Dean's Letter, which presents a comprehensive picture of each student's strengths. Selection for GME positions is competitive; OSA and students work together to create the best nomination packages possible.

Graduate Medical Education Selection Board. The Tri-Service Selection Board convened during the first week of December and 148 USUHS seniors were selected for PGY-1 positions (Army-54; Navy-48; Air Force-45; USPHS-1). Approximately half of the class (49 percent) was selected for training in primary care specialties; 72 seniors began residency training during the summer in the following four areas: Family Medicine (37); Internal Medicine (16); Pediatrics (12); and, Obstetrics and Gynecology (7). The directors of the MHS military programs once again demonstrated confidence in the USU graduates as 84 percent were selected for PGY-1 training at their first choice by specialty and site.

Domestic Violence Seminar. On January 10, 1998, a one-day seminar entitled "The Forensic Implications of Intimate Partner Abuse" was presented at the Georgetown University School of Medicine. The seminar was designed to assist medical students of the District of Columbia to learn how to identify and treat patients, or victims, of domestic violence. The seminar was coordinated by the Georgetown Medical School and strongly supported by USU, George Washington, and Howard University students. The USU Class Presidents and the AAMC and AMA Student Chapter Presidents played a significant role in promoting student registration and participation. The program included interactive panel discussions; feedback from the USU participants was quite positive.

The USU Military Medical Student Association Hosts A National Convention. The Military Medical Student Association (MMSA), a quad-service, student-run organization that originated at USU more than ten years ago, hosted its National Convention at USU on April 17, 1998. MMSA members organized the conference, which gave USU medical students and their counterparts in the Health Profession Scholarship Program (HPSP) an opportunity to form relationships and to discuss military issues and military medicine. MMSA's goals include developing lines of communication among military medical students nationwide, providing information, and promoting morale and unity among future military medical officers.

Unlike USU medical students, HPSP students attend universities in the civilian sector, receive free tuition and books, and are paid a monthly stipend while working toward their medical degrees. They receive limited military training and influence while attending the civilian schools. In an attempt to share their unique military training, MMSA sponsored a convention which was attended by 70 USU and HPSP medical students. Residency directors and medical specialty representatives from around the country, and USU staff and faculty members presented lectures and held discussions on various topics, including service specific issues, military medical history, operational considerations of military medicine, and basic military concerns that affect both USU and HPSP medical students. A dining-in, hosted by the USU President, was also held. The USU MMSA has also established the MMSA Journal with a goal to ultimately send copies of the journal to all HPSP students.

ALUMNI OF THE SCHOOL OF MEDICINE.

"It is a doctrine of war not to assume the enemy will not come, but rather to rely on one's readiness to meet him. It is a doctrine of war not to presume that he will not attack, but rather to make oneself invincible."

Sun Tzu, Chinese warrior-philosopher, 2,000 BC.

General Overview. The graduating Class of 1998 was the nineteenth class to receive Medical Degrees from USU. Of the total 2,628 medical school graduates, 2,372 remain on active duty in the Uniformed Services and represent approximately 19 percent of the total physician force in the Department of Defense. USU graduates have a seven-year obligation that only begins after they complete their three-plus years of residency training. This obligation is exclusive of any other they may have already incurred, such as graduation from one of the service academies. After 19 graduations, data is now available to document that the USU SOM graduates are meeting the goals established by the founders of USU. In just a short timeframe, USU graduates have become well respected in their medical specialties, and have become the core leadership in areas of military medicine ranging from special operations and hospitals, to the White House and Bosnia deployments, and to assignments aboard ships at sea. Other alumni are engaged in patient care or research in military hospitals and clinics around the world, administering to active duty members, retirees and family members. USU graduates are, and continue to provide, a strong cadre of leaders who ensure the continuity of military medicine.

USU SOM Graduates Earn Leadership Roles and Special Recognition throughout the Uniformed Services.

USU Army Graduates Selected for Promotion.

Nineteen USU graduates were selected for the 1998 Colonel Promotion List. Three of those alumni are assigned to USU: **Lieutenant Colonel George Fuller, U.S. Army,** Class of 1981, Commandant, School of Medicine; **Lieutenant Colonel James Geiling, U.S. Army,** Class of 1982, Assistant Professor, Department of Military and Emergency Medicine; and, **Lieutenant Colonel Ann Norwood, U.S. Army,** Class of 1981, Assistant Professor, Department of Psychiatry. The nineteen alumni represent USU Classes from 1981 through 1986. Overall, USU alumni had a selection rate of 83 percent (19 of 23) compared to 31 percent (46 of 149) for non-USU graduates.

USU Navy Graduates Selected for Promotion.

Eleven USU graduates were selected for promotion to Navy Captain: Class of 1982 - 6; Class of 1983 - 3; Class of 1985 - 1; and Class of 1988 - 1.

A total of 184 officers were selected for promotion to Navy Commander; 50 (27 percent) were USU graduates: Class of 1983 - 1; Class of 1984 - 1; Class of 1985 - 3; Class of 1986 - 9; Class of 1987 - 27; Class of 1988 - 3; Class of 1989 - 5; and, Class of 1990 - 1.

Forty-eight USU graduates (Classes of 1991 through 1996) were selected for the Navy Medical Corps Lieutenant Commander Promotion List.

USU Classes of 1980 Through 1996.

Class of 1980.

Colonel (selectee) Howard Heiman, U.S. Army, is the Director of Clinical Neonatology for the San Antonio Military Pediatrics Center at Wilford Hall U.S. Air Force Medical Center, San Antonio.

Colonel Thomas Yasuhara, MC, U.S. Air Force, is the Associate Director, Aerospace Medicine Residency, USAF School of Aerospace Medicine, Brooks Air Force Base, Texas.

Captain Sandra Yerkes, U.S. Navy, is the Chief of Inpatient Psychiatry at Walter Reed Army Medical Center in Washington, D.C.

Class of 1981.

Lieutenant Colonel George Fuller, U.S. Army, has been selected to serve as a senior physician in the Office of the President.

Commander Michael Fahlgren, MC, U.S. Navy, served a six-month deployment to the Mediterranean Sea and Arabian Gulf with Commander, Amphibious Squadron Six. He served on board the amphibious assault ship and Amphibious Ready Group (ARG) flagship USS Wasp. Commander Fahlgren's unit prepared for the deployment by participating in the exercise Special Operations Capable off the coasts of North' Carolina and Puerto Rico. The exercise tested the ARG's ability to respond to any contingency it could encounter during the deployment.

Captain Konrad Hayashi, MC, U.S. Navy, is currently serving as the Force Medical Officer for the Commander, Naval Surface Force, U.S. Atlantic Fleet, based in Norfolk, Virginia. He has recently been accepted to the Industrial College of the Armed Forces for attendance in the summer of 1999.

Class of 1982.

Lieutenant Colonel Don Daniels, U.S. Army, is Chief of the Anesthesia and Operative Service, at the Brooke Army Medical Center, Fort Sam Houston, Texas.

Colonel William Germann, U.S. Air Force, served as the Commander of the 51st Medical Group Hospital at Osan Air Base, Republic of Korea; and, following that assignment, Colonel Germann assumed command of the U.S. Air Force Medical Center at Scott Air Force Base, Illinois.

Lieutenant Colonel George Johnson, U.S. Air Force, is the Commander of the 750th Medical Squadron at Onizuka Air Station, California. LtCol Johnson also received his Master of Public Health Degree at USU in 1988, and was recently selected for promotion to Colonel.

Class of 1983.

Lieutenant Colonel Clifford Cloonan, U.S. Army, is the Dean of the Joint Special Operations Military Training Center of the U.S. Army JFK Special Warfare Center and School at Fort Bragg, North Carolina.

Commander Kevin Yeskey, U.S. Public Health Service, authored a chapter in the newly published textbook, Emergency Medicine. Volume 2, entitled "Radiation Exposure." Yeskey produced this work while serving as an Associate Professor in the Department of Military and Emergency Medicine and Executive Director of the Center for Disaster Medicine and Humanitarian. Assistance. Commander Yeskey is currently serving as the Chief Medical Officer for the USPHS Office of Emergency Preparedness. In this position, Commander Yeskey provides medical consultation for the National Disaster Medical System during times of deployment; he is also the clinical consultant to the Director, Office of Emergency Preparedness, USPHS.

Colonel Stephen Waller, U.S. Air Force, was a finalist for the 1997 Gold Headed Cane Society Award, which honors the top physician as judged by his or her peers at Wilford Hall U.S. Air Force Medical Center, San Antonio, Texas. Colonel Waller is the Chairman of the hospital's Department of Opthalmology.

Lieutenant Colonel Charles Beadling, U.S. Air Force, is the Deputy Group Commander of the 92nd Medical Group, Fairchild Air Force Base, Washington; he was recently selected for promotion to Colonel.

Commander Arthur French, U.S. Public Health Service, is a flight surgeon with the U.S. Coast Guard Health and Safety Division in Boston.

Lieutenant Colonel David Goodwin, U.S. Air Force, is the Director of Medical Services at the Naval Hospital, Okinawa, Japan.

Commander Sandy Kweder, U.S. Public Health Service, was selected as the Deputy director for ODE-4, the office within the Food and Drug Administration's Center for Drug Evaluation and Research.

Class of 1985.

Commander Philip Coyne, U.S. Public Health Service, has been assigned to the Onchocerciasis Coordination Unit, Africa Region, of the World Bank. He is serving as a consultant in tropical medicine.

Commander David E. Thomas, U.S. Navy, is Chief of the Department of Dermatology at the Naval Hospital in Camp Pendleton, California and also serves as the USU alumni point of contact at Camp Pendleton.

Class of 1986.

Lieutenant Colonel William E. Bolger, MC, U.S. Air Force, Associate Professor in the USU Department of Surgery, has been **included in the fourth edition of The Best Doctors in America.** Physicians listed in the publication are selected by their peers, with more than **3** 5,000 doctors surveyed

to rate the clinical abilities of other doctors in their area of specialization. Only those physicians who earn the consensus support of their peers are included in the listing. The Best Doctors in America provides a single resource for thousands of patients as they determine where to seek treatment.

Major Theodore Jordan, U.S. Air Force, is **Chief of Orthopedics** at the 81st Surgical Squadron, Keesler Air Force Base, Miss.

Commander Peter Linz, U.S. Navy, transferred to the Naval Medical Center, San Diego, as **Program Director** for the Cardiology Fellowship Program.

Lieutenant Colonel Andrew Satin, U.S. Air Force, was the senior author for a publication titled, "Oxytocin Labor Stimulation of Twin Gestations: Effective and Efficient." The article appeared in Obstetrics and Gynecology, (Volume 90, No.2, pages 202-204). LtCol Satin is the Vice Chair of the USU Department of Obstetrics and Gynecology and was recently selected as the Director of the OB/GYN Residency Program for the National Capital Consortium.

Lieutenant Colonel Steven Swann, U.S. Army, is currently assigned as the Division Surgeon for the 101st Airborne Division (Air Assault), Fort Campbell, Kentucky; he was recently selected double below the zone for promotion to Colonel.

Class of 1987.

Commander Ralph Jones, U.S. Navy, participated in a multinational exercise in the Mediterranean and Baltic Seas in July while serving aboard the hospital ship, USNS Comfort. More than 700 active duty and Navy reservists joined military members from 11 European nations in Baltic Challenge '98. The three-week exercise tested peacetime support operations among the United States and the Baltic nations of Estonia, Latvia, and Lithuania.

Major Edward Lucci, U.S. Army, transferred in early Fiscal Year 1998 to the Department of Emergency Medicine at the Walter Reed Army Medical Center; the major previously served as an **Assistant Professor in USU's Department of Military and Emergency Medicine.**

Lieutenant Colonel John Powell, U.S. Army, is currently assigned as the **Division Surgeon for the 82nd Airborne Division** at Fort Bragg, North Carolina; he was recently selected double below the zone for promotion to Colonel.

Lieutenant Commander Peter Rhee, MC, U.S. Navy, presented his abstract, "Lactated Ringer's Resuscitation in Hemorrhagic Shock Rats Induces Immediate Apoptosis," at the 58th Annual Meeting of the American Association for the Surgery of Trauma, on September 24, 1998 in Baltimore, Maryland. LtCommander Rhee is an Assistant Professor in the USU Department of Surgery.

Class of 1988.

Lieutenant Commander Barbara Burr, U.S. Navy, participated in a multinational exercise in the Mediterranean and Baltic Seas in July as part of Baltic Challenge '98.

Colonel Richard Smerz, MC, U.S. Army, earned a Master of Tropical Medicine and Hygiene Degree and is commanding the Leonard Wood Army Community Hospital at Fort Leonard Wood, Missouri.

Major Kondi Wong, MC, U.S. Air Force, was recognized for his contributions to the 1997 Nobel Prize winner in medicine. Major Wong, recently appointed to the faculty of USU's Neuroscience Program, worked with Dr. Stanley Prusiner in the S. J. DeArmond Neuropathology Laboratory at the University of California, in San Francisco.

Class of 1989.

Commander Stephen Holman, MC, U.S. Navy, Assistant Professor of Anesthesiology at USU, made an oral presentation of his abstract, "Test Dose Reliably Confirms Successful Placement of Thoracic Epidural Block Within 8 Minutes of Dosing," at the American Society of Regional Anesthesia's Annual Meeting in Seattle in May 1998. Two other USU graduates and an Associate Professor collaborated on the research: Commander Richard Bosco (Class of 1989), Department of Anesthesiology, Naval Medical Center, Portsmouth, Virginia; Lieutenant Commander Michael Mazzilli (Class of 1990), Anesthesiology, Naval Medical Center, San Diego, California; and Tzu-Cheg Kao, Ph.D., Associate Professor, USU Department of Preventive Medicine and Biometrics.

Commander Steve Scott, U.S. Public Health Service, Master of Public Health Degree graduate and an occupational medicine residency graduate of USU, is the Emergency Coordinator, Region X, for the Public Health Service Office of Emergency Preparedness in Seattle, Washington.

Major Gregory Semancik, MC, U.S. Army, received a travel award to present the findings of his research at the Joint European and North American Pediatric Gastroenterology Societies. His abstract was titled, "Orogastric Challenge of rabbits with human enterotoxigenic Escherichia coli (ETEC) strains that adhere to rabbit brush borders in vitro."

Class of 1990.

Lieutenant Colonel William Flynn, U.S. Air Force, is the Department of Defense Representative on the National Eye Advisory Council. The council, a subsidiary of the National Institutes of Health, is responsible for evaluating research grant requests. It is composed of ten professionals from throughout the United States. The Lieutenant Colonel is assigned to the Department of Ophthalmology at Wilford Hall U.S. Air Force Medical Center in San Antonio, Texas. He is a board-certified ophthalmologist and a Doctor of Optometry. He also holds a Master's Degree in Vision Science. He has published extensively in national journals and recently completed a fellowship in glaucoma treatment. He passed his specialty board with the highest score in the United States.

Lieutenant Commander Scott Helmers, MC, U.S. Navy, earned the Navy and Marine Corps Achievement Medal. He is an orthopedic surgeon at the U.S. Naval Hospital in Bremerton, Washington.

Major Tod Russell, MC, U.S. Air Force, graduated from the Pediatric Infectious Disease Fellowship. He presented his research evaluating the pharmacokinetics of RSVIG at the 1997 Armed Forces Infectious Disease Society and the 1997 Infectious Disease Society of America.

Major Gary Wheeler, U.S. Army, a teaching staff internist at the Walter Reed Army Medical Center, received the Colonel Robert H. Moser Award from the American College of Physicians Army Regional Chapter. The award recognizes an outstanding general internist who has been practicing for at least two years. Major Wheeler is the third USU alumni to receive this award.

Class of 1991.

Major William Rice, U.S. Army, served as the Deputy Surgeon for the Multinational Division, North American Sector, with the peacekeeping forces in Bosnia during Fiscal Year 1998. Rice served in a command surgeon position for the Commander of the 1st Armored Division at Eagle Base, Tuzla. Following this assignment, Rice returned to his position in the Department of Preventive Medicine and Biometrics at USU.

Class of 1992.

Lieutenant Commander David Carpenter, MC, U.S. Navy, completed the Neonatal-Perinatal Medicine Fellowship at the National Capital Consortium. During his fellowship, Carpenter developed particular expertise in the field of neonatal pulmonary hypertension. He presented his research, "The role of superoxide and hydrogen peroxide in Group B Streptococcus induced pulmonary hypertension in the lamb," at the Conference on Military Perinatal Research and to the American Academy of Pediatrics.

Lieutenant Commander Sarah Linde-Feucht, U.S. Public Health Service, received the Clinical Physician of the Year Award from the Physicians Professional Advisory Committee to the Surgeon General at the Commissioned Officers Association 1998 Public Health Professional Conference in June. The award recognized her for initiative, enthusiasm and concern for quality while practicing family medicine at the Shenandoah Valley Medical Center.

Captain Matthew Rettke, U.S. Army, served as the Squadron Surgeon for the 2nd Squadron of the 2nd Armored Cavalry Regiment with the peacekeeping forces in Bosnia, during Fiscal Year 1998. His unit was under the operational control of the 1st Armored Division, located at Camp Dobol. Captain Rettke served in a command surgeon position.

Major Lee Saltzgaber, U.S. Air Force, is the Commander of the 35th Aerospace Medicine Squadron, 35th Fighter Wing, Misawa Air Base, Japan.

Class of 1993.

Lieutenant David Murray, U.S. Navy, transferred to NNMC following the completion of studies at the Undersea Medical Officer School, Naval Undersea Medicine Institute, Groton, Connecticut.

Captain James V. Winkley, MC, U.S. Army, completed his anesthesia residency in June at the Walter Reed Army Medical Center; he served as the chief resident and received the Robert D. Dripps

Award as the outstanding graduate. He also eafned first place in the Maryland-D.C. Society of Anesthesiology Resident Research Contest.

Class of 1994.

Lieutenant Dan Fisher, U.S. Navy, transferred to the Naval Hospital, Guantanamo Bay, Cuba, where he serves as the **Chief of the Department of Internal Medicine.**

Lieutenant Kim Forman, U.S. Navy, is the Officer-In-Charge of the Leeward Point Clinic on Guantanamo Bay, Cuba.

Lieutenant Michael McClincy, U.S. Navy, deployed to the Mediterranean Sea aboard the multipurpose amphibious assault ship USS Guam. Prior to the deployment, the ship participated in an Atlantic Joint Task Force exercise off the eastern United States that involved all U.S. Services, a Canadian task group, and ships from other NATO countries.

Captain Barry Pockrandt, U.S. Army, served as the Squadron Surgeon for the 4th Squadron of the 2nd Armored Cavalry Regiment with the peacekeeping forces in Bosnia, during Fiscal Year 1998. His unit was under the operational control of the 1st Armored Division and he was based at Camp Demi, in the southern part of the American sector. Captain Pockrandt served in a command surgeon position.

Class of 1995

Captain John Barrett, U.S. Army, earned the 1997 Mead Johnson Award for Graduate Education at the American Academy of Family Physicians Annual Assembly in Chicago. He was one of only 20 family medicine residents nation-wide to receive the award, which is based on leadership ability, community involvement and exemplary patient care.

Lieutenant Frank Bishop, MC, U.S. Navy, is the Diving Medical Officer for SEAL Delivery Vehicle Team One, Pearl Harbor, Hawaii.

Captain Derek Hebert, U.S. Air Force, is a **flight surgeon** with the 351st Air Refueling Squadron at the Royal Air Force Base, Mildenhall, United Kingdom. He will be stationed in England for three years.

Captain Jessica Mitchell, U.S. Air Force, one of eight senior family practice resident physicians assigned to the 96th Medical Group, Eglin Air Force Base, Florida, earned the highest score in the Nation on the annual American Board of Family Practice Intraining Examination. Each November, the board gives a comprehensive, full-day examination testing the knowledge of every senior family practice resident physician in the United States. A total of 10,329 resident physicians took the examination.

Class of 1996.

Lieutenant Mark Herrera, U.S. Navy, completed Flight Surgery School in Pensacola and is a **Flight Surgeon with a Marine helicopter squadron** based at the Marine Corps Air Station El Toro, in Santa Ana, California.

Captain Janice Moseley Langer, U.S. Air Force, MC, earned a 1998 Mead-Johnson Award from the American Academy of Family Practice Physicians for excellence in family practice residency; she is the co-chief resident of the intern program at Eglin Regional Hospital, Eglin Air Force Base, Florida. She is also the Air Force Resident Director for the Uniformed Services Academy of Family Physicians.

Lieutenant Craig Spencer, MC, U.S. Navy, is a flight surgeon with Carrier Air Wing Two, San Diego, following completion of his surgery internship at the Naval Medical Center, San Diego.

Lieutenant Greg Thier, U.S. Navy, completed Flight Surgery School in Pensacola and graduated as **the class leader** with a follow-on assignment to Carrier Air Wing Two at Navy Air Station, Whidbey Island, Washington, attached to the USS Constellation.

Selected Profiles of USU School of Medicine Graduates.

Army.

During May of 1998, **Major Chris Macedonia**, USU Class of 1992, put most of his operational medicine skills to maximum use when he **climbed Mount Everest with other medical researchers to a base camp at 17,500 feet to monitor summit climbers and test a portable three-dimensional ultrasound unit designed to save soldiers' lives. Walter Reed Army Medical center physicians received data from the researchers via telemedicine technology from the Everest Extreme Expedition, or E3, a fourman team that made it all the way to the Everest Summit. This was the first mission on Everest that monitored the physiological status of climbers at extreme altitudes. The project studied a physiologic status monitoring system developed by MIT and labs for the Defense Advanced Research Project Agency and the military. The device would collect data such as the soldier's blood pressure, pulse, oxygen and stress level. Also included in the system is a GEOPAC which allows soldiers to be monitored with respect to position by using a satellite tracking system to identify the geographical location of a soldier. The computer would monitor all troops in the field, automatically alerting medical authorities when a patient's vital signs begin to deteriorate.**

In addition to the personal status monitor, researchers also tested the portable three-dimensional ultrasound device, called MUSTPAC (medical ultrasound three-dimensional portable advanced communication). Major Macedonia developed the idea for his monitor while at USU in 1991. MUSTPAC enables a medic with very little ultrasound experience to scan and automatically evaluate a casualty in a systematic way. Three-dimensional ultrasound data is then captured in a computer file. That file is transferred over telecommunication lines to an experienced radiologist. MUSTPAC proved itself during the expedition; phase two testing of MUSTPAC continues at the National Naval Medical Center. Major Macedonia is currently conducting his MUSTPAC 3D telemedicine research on board the USS Enterprise.

Navy.

During Fiscal Year 1998, **Lieutenant Michael McClincy**, Class of 1994, was a member of Surgical Team 6, headquartered at the Naval Amphibious Base, Little Creek, Virginia. He was deployed with the amphibious assault ship, the USS Guam, in the Persian Gulf. Lieutenant McClincy's surgical team was responsible for the medical and surgical care of more than 20,000 Marines belonging to the 24th Marine Expeditionary Unit aboard the Guam. The team also cared for the crew members of the **USS** Shreveport, USS Ashland, and the USS Oak Hill, all of which were part of the amphibious ready group sailing with the Guam. Lieutenant McClincy worked in a medical treatment area that had two operating rooms, a two-bed intensive care unit, and a 17-bed ward with overflow for about 50 additional patients. He assisted with sick call and served as preceptor for the corpsmen on board. He oversaw any nonsurgical admissions to the ward and took care of patient referrals from other ships, to include; a consult from a French frigate while moored in Antalya, Turkey. Another of his duties was the provision of quality assurance for all of the medical charts handled by the nine general medical officers within the amphibious ready group. "I think the most helpful thing I learned at USU was to stay flexible...At the very least, don't always expect to have ready access to stateside hospital standards of care ... (the Guam) is still a ship, and things have to be done differently."

United States Air Force.

Lieutenant Colonel John Baxter, USU Class of 1989, is currently the Commander of the Pentagon Flight Medicine Clinic. As one of the clinic's four flight surgeons, he is the first family physician and USU graduate to command the clinic. Although the physicians are primarily responsible for Air Force and other fliers assigned to the Pentagon, they also provide clinical care to the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and senior Air Force leaders. All of the clinic physicians are adjunct faculty members at USU. LtCol Baxter believes that "USU is a great avenue for professional development for our career physicians. Teaching is something that all four of us enjoy."

The Pentagon clinic physicians must be able to provide comprehensive care anywhere and at any time and are chosen, among many factors, for their clinical skills. They are all flight surgeons and are expected to provide care for aircrews during international travel. Because they are expected to serve in a variety of situations, with significant security risks, all have received Counter Narcotics Tactical Operations Medical Support (CONTOMS) training, developed and administered at USU by the Casualty Care Research Center and Department of Military and Emergency Medicine. Currently in his third year as the Clinic Commander, LtCol Baxter is proud of the mission and his people. In May of 1998, following inclusive inspections, the clinic was ranked in the top five percent of medical facilities and had two activities designated "best in the Air Force."

LtCol Baxter enrolled as a USU medical student after serving as a military lawyer for five years. At his USU graduation, LtCol Baxter received the Esprit de Corps Award and the Air Force Surgeon General Award. He completed his internship at Offutt Air Force Base, Nebraska, and remained there as a squadron flight surgeon. In 1995, Baxter completed his family practice residency at the University of Nebraska Medical Center, a joint Air Force/civilian residency and one of the largest family practice residencies in the country. During his time there, LtCol served as the Chief Resident and won awards for research and as the outstanding resident. LtCol Baxter has worked with USU graduates in evacuation hospitals and on the flight line in Saudi Arabia when deployed to King Khalid Military City during the Gulf War. He clearly believes that "the longer you spend in the medical corps, the more you

appreciate the foundation you get at USU. From military medicine, to combat psychiatry, to ACLS, to ATLS, your USU training will stand you in good stead."

U.S. Public Health Service.

Lieutenant Commander Sarah Linde-Feucht, USU Class of 1992, provides medical care in the eastern panhandle of West Virginia, in Jefferson County. Sarah is the only family physician assigned to the Shenandoah Valley Medical Center (SVMC) in Martinsburg, West Virginia. She is one of six physicians at the center and serves by providing care and facilitating communication between the internists and the pediatricians. The Lieutenant Commander has a diverse patient population. Her patients range from newborn to geriatric, white collar to seasonal migrant farm workers, many of whom cannot afford medical care. At present, more than half of Sarah's patients have either no health insurance or are covered by Medicare or Medicaid. They are precisely the type of people who inspired Sarah to choose medicine as a career. She applied for and received a commission in the Public Health Service. What Sarah remembers most about her four years at USU are the "excellent and committed teachers, both in the classroom and on clinical rotations." The Lieutenant Commander pointed out that USU provided her with a solid foundation in the basics of medical education "plus the extras of field training and exposure to the mission and work of the Public Health Service." It was her organizational skills which led to the implementation of medication and vital signs lists in patient records at SVMC. As a result of her efforts, an easily identifiable color-coded sheet provides a central record for the data. She has also implemented a similar procedures tracking system in patient records, and is currently developing a telephone triage protocol for nurses assessing patient illnesses over the telephone. SVMC designated Lieutenant Commander Linde-Feucht as the medical director of its new family practice clinic which opened in January 1998. It has been six years since her graduation from USU; Lieutenant Commander Linde-Feucht remains "just as delighted and eager to serve today" as when she first applied to USU.

FACULTY OF THE SCHOOL OF MEDICINE

Composition. The School of Medicine has 279 full time faculty members; 164 civilians and 115 uniformed officers. There are some 3,232 adjunct faculty who assist in the USU programs of which 1,107 are civilians and 2,125 are uniformed officers.

SOM Clinical and Consultative Services Generated an Estimated \$7.3 million in Cost Avoidance for DoD in Fiscal Year 1998. The affiliated Medical Treatment Facilities (MTFs) in the National Capital Region (the National Naval Medical Center (NNMC), the Walter Reed Army Medical Center (WRAMC), and the Malcolm Grow Air Force Medical Center (MGMC) use the services of the USU faculty for the provision of health care.

The USU SOM civilian and military clinical faculty members, as a part of maintaining their credentials and level of proficiency, provide medical services and consultation to the hospital patients and staff and teach and supervise residents. In order to meet national accreditation standards, all teaching hospitals must provide both patient care and teaching/supervision of medical students, interns and resident

physicians. These accreditation standards are not generated by USU; they will continue to exist at the MTFs whether or not USU is operating. Therefore, cost avoidance to the Department of Defense (DoD) is generated by the hours of clinical service and medical expertise provided by the USU civilian and military faculty. Thirteen USU SOM academic departments (Anesthesiology, Dermatology, Family Medicine, Department of Medicine, Military and Emergency Medicine, Neurology, Obstetrics and Gynecology, Pathology, Pediatrics, Preventive Medicine and Biometrics, Psychiatry, Radiology and Nuclear Medicine, and Surgery) provided clinical and consultative support to DoD that totalled over 133,000 hours in Fiscal Year 1998, with an estimated cost avoidance of \$7.3 million.

Without the patient care and special services provided by USU SOM throughout the DoD medical facilities, the military hospitals, clinics and other facilities would find it necessary to increase their staffs by 133,000 work hours or increase the use of commercial sources.

Selected Profiles of USU School of Medicine Faculty.

J. Leonel Villavicencio, M.D., Professor in the Department of Surgery, was awarded the Degree of Academico Honorario, the highest-academic honor offered by the Mexican Academy of Surgery. The award was presented during a ceremony at the National Medical Center of Mexico City in June 1998. The award recognizes those individuals who have dedicated their lives to the highest interests and ideals of the medical profession. It also acknowledges the national and international accomplishments of men and women, who through research, teaching and patient care, maintain the highest principles of medicine.

The Mexican Academy of Surgery is comprised of highly regarded physicians and surgeons and is the highest academic body in Mexico. It serves as a national adviser and consultant in health matters to the Mexican government and Mexico's Department of Health of the Nation. Dr. Villavicencio is the second USU faculty member to receive the Academico Honorario. **Norman Rich, M.D., Professor and Chair** of the Department of Surgery, earned this award in 1990.

Consistent with their extraordinary international efforts, Dr. Villavicencio and Dr. Rich have established the Premio A la Amistad at the Henry M. Jackson Foundation for the Advancement of Military Medicine. This award is presented to a surgeon under the age of 40 who presents the best paper during the annual meeting of the Mexican Society of Angiology and Vascular Surgery. The winner also presented his paper during the Society of Military Vascular Surgeon's Annual Meeting at USU.

Captain Robert Goldstein, M.D, U.S. Public Health Service, and Colonel Louis Pangaro, MC, U.S. Army, Retire from the Uniformed Services and Continue Work at USU. Upon their retirement from active duty service, both of these distinguished USU faculty members received the Defense Superior Service Medal recognizing their outstanding service to the University and to military medicine. Both will remain in the Department of Medicine as they transition to civilian life. Dr. Goldstein, has been the Professor and Chair of the Department of Medicine since 1996. He also served as the Director of the Department's Cardiology Division. The Defense award citation pointed out Dr. Goldstein's major contributions to the understanding of numerous facets of cardiovascular disease, including the management of patients before, during and following myocardial infarction; the causes and

treatment of sudden cardiac death; the mechanisms controlling coronary vascular tone; and, the physiology of inherited cardiac malformations. Dr. Goldstein has published more than 100 scientific journal articles on the treatment and control of heart disease. He has also served on and chaired university administrative and research committees, and he has co-directed USU's Center for Excellence in Cardiovascular Medicine.

Louis Pangaro, M.D., is Professor of Medicine and is internationally known for enhancing the quality of medical education. Dr. Pangaro has focused his career on evaluating student's progress during medical school. He has personally given feedback to nearly 3,000 future military medical officers. During the past years, Dr. Pangaro has served as the Vice Chair for Educational Programs in the Department of Medicine; he chaired both the Department and University Education Committees; and, he also served as the President of the USU Faculty Senate.

William P. Clements Jr. Award. - Lieutenant Colonel Richard M. Conran, MC, U.S. Army, Associate Professor, Department of Pathology, was chosen by the graduating Medical School Class of 1998 to receive the William P. Clements Jr. Award. This award is presented to the uniformed faculty educator who exemplifies the principles of excellence in education by personal example and performance. The award is named for the former governor of Texas and Deputy Secretary of Defense who had a keen interest in the education of those who serve the Nation.

USU Outstanding Civilian Educator Award. - Alison D. O'Brien, Ph.D, Professor and Chair of the Department of Microbiology and Immunology, was chosen by the graduating Medical School Class of 1998 to receive the USU Outstanding Civilian Educator Award. This award is presented to the civilian faculty member who displays the highest qualities of a medical educator by personal example and performance.

Four Physicians Affiliated with USU Received Association of Military Surgeons of the United States (AMSUS) Awards. The 104th Annual Meeting of AMSUS took place in Nashville, Tennessee, from November 16 through 20, 1997. The theme of the AMSUS meeting was "Chemical, Biological and Radiation Threats: A Challenge for Federal Medicine." Approximately 5,500 federal health care professionals attended the meeting. During the meeting, four physicians affiliated with USU received 1997 AMSUS awards.

Val G. Hemming, M.D.. Dean of the F. Edward Hebert School of Medicine, was presented the Sustaining Membership Award Lecture for his presentation entitled, "Science, Dogma, Serendipity, and the Respiratory Syncytial Virus (RSV)."

Maior General Leslie M. Burger, MC. U.S. Army. Advisor to the USU Board of Regents, earned the John D. Chase Award for Physician Executive Excellence for his superb leadership and unparalleled performance, and cutting edge initiatives while serving as the Commanding General of the North Atlantic Regional Medical Command.

Lieutenant General Ronald R. Blanck, MC, U.S. Army. Member of the USU Board of Regents received the Founders Medal for his sustained support and the leadership provided to AMSUS in preparing for the Association's 104th meeting. Lieutenant General Blanck is the Surgeon General of the Army.

Maior General Paul K. Carlton, MC, U.S. Air Force, Clinical Professor of Surgery, was recognized with the Richard A. Kern Lecture Award for his presentation, "Weapons of Mass Destruction."

RESEARCH/CONSULTATIVE EFFORTS

"We will develop interdisciplinary programs in Combat Casualty Care, Health Maintenance and Disease Prevention, Infectious Diseases, Genetics and Cell Biology, and Behavioral and Neurosciences relevant to the needs of the Uniformed Services."

Strategy 3.1, Goal 3, USU Strategic Plan.

Research Is Directed Toward Military Requirements. The 450 research programs/projects currently taking place at USU which annually represent substantial funding from external sources for research, especially seek to meet the needs of the military. USU faculty (over 200 investigators), adjunct faculty, participants in the USU graduate and graduate medical education programs, and collaborative endeavors, both national and international, are at the forefront of the innovative, practically-motivated research that is taking place in the Defense Health Program. The University currently holds more than 30 licensed patents. A few of the USU research programs include: the USU Traumatic Stress Center; the USU Casualty Care Research Center; the Centers for Preventive Medicine and Public Health; the Center for Prostate Disease Research; and, the Armed Forces Radiobiology Research Institute.

Research Administration. The Office of the Vice President for Research was established at USU to facilitate, promote and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty. The Office of Research monitors, reviews, and coordinates approvals for all matters dealing with research at the University, to include the following responsibilities: identification of funding sources (to include a database to search for research opportunities available on the Office of Research's Home Page); pre-award administration; post-award administration; grant award and receipt; institutional review board (IRB) approval; and, monitoring of regulatory compliances. Symposia have also been coordinated by the Office of Research during Fiscal Years 1997 and 1998 on how to "Write Winning Grants" (in both lecture and hands-on formats), the "Protection of Human Subjects," and "Communicating Science."

Some 450 research protocols at USU cover an inclusive variety of scientific areas, including basic biomedical areas of high relevance to the mission of the Military Health System, such as: infectious diseases; sepsis; combat casualty care; operational medicine; nuclear, biological, and chemical interactions; Defense women's health issues; TriService nursing; military performance factors; and, responses to the stresses of military life (see Appendix B for Examples of Individual Achievements and Recognition - Billeted and Adjunct USU Faculty).

Research Studies Diseases of Military Relevance. Research protocols at USU study diseases of high military relevance for troop deployment and sustainment. For example, malaria is endemic in many areas where the military deploys its fighting forces; recent technological advances conducted by University researchers have made it possible to predict mosquito population levels and disease transmission risk within precise areas and time frames. By using satellite imaging and remote sensing, USU researchers assist in predicting high-risk locations for malaria occurrence. These predictions focus disease control operations and conserve scarce finances and human resources. Some of the infectious diseases being studied at USU include the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; and, bartonellosis. Some additional areas of research focus include: determination of the most appropriate site for effective immunization against a variety of microbial agents; identification of heretofore unknown bacterial virulence genes; and, analysis of how selected viruses assemble and cause pathology.

Research Relates to Combat Casualty Care. Research contributed by USU faculty relating to combat casualty care continues to provide rapid diagnostic methods and treatments which ensure military readiness, excellent care for deployed fighting forces, and the rapid return of the injured and sick to active duty. Numerous research protocols dealing with combat casualty care focus on five general subject areas: 1) blood preservation and delivery (i.e., effects of cross-linked hemoglobin in traumatic brain injury; global and local responses to profound hemodilution; and, environmental hazards and heme regulation); 2) treatment of nerve injury and healing (i.e., low power laser irradiation on in vivo nerve regeneration; and, neurocytokines and plasticity in sensory nerve injury); 3) prophylactic intravenous antibiotics for penetrating eye injury; 4) understanding, preventing and treating endotoxic shock; 5) wound healing and sepsis (i.e., characterization of inflammation and its mediators); and, 6) the treatment of traumatic injury (one example is the Defense and Veterans Head Injury Study.

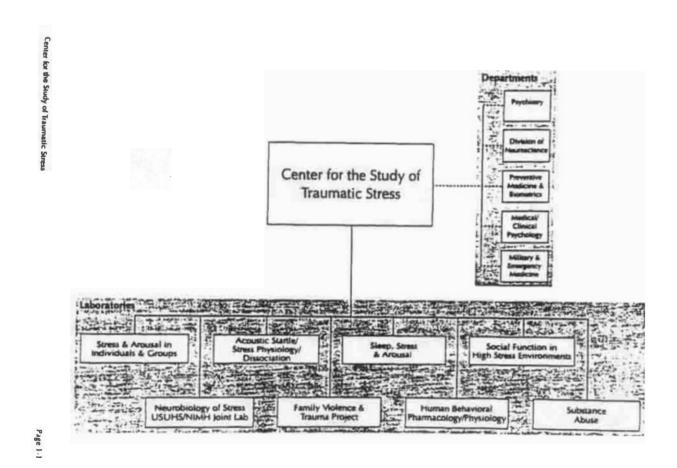
Military Operational Medicine. Many of the research protocols in the subject area of military operational medicine fall into three general categories: 1) factors decrementing human performance (i.e., acute and chronic Post Traumatic Stress Disorder (PTSD); and, hyper- and hypothermia); 2) factors increasing military readiness (i.e., human performance models for exercise; reduction in acute and chronic injuries); and, 3) endocine control and performance (endocrine and immune interactions with exercise; and, human stress and trauma).

USU School of Medicine Department of Psychiatry and the Center for Traumatic Stress Consultative Services.

Background. Terrorism, hostage events, the poison gas attack on the Tokyo subway, the Oklahoma City bombing, and disasters such as the Kobe earthquake, as well as more common traumatic events such as motor vehicle accidents, humcanes, tornadoes, and physical assaults are a substantial health risk to those who serve our Nation in the Uniformed Services and to the general population. USU is an academic institution that is both nationally and internationally recognized for its consultative services to government and private organizations in times of disasters and critical incidents. As the academic health sciences center for the Uniformed Services, USU is well situated to assist in meeting the needs of the Military Health System and of the Nation in the area of traumatic stress. In 1987, USU scientists,

educators, and worldwide collaborators (both uniformed and civilian) established the USU Center for Traumatic Stress At present, investigators from the USU School of Medicine Departments of Psychiatry, Preventive Medicine and Biometrics, Military and Emergency Medicine, and Medical and Clinical Psychology, and the Division of Neuroscience are engaged in extensive studies of traumatic stress.

Purpose. The purpose of the Center is to increase medical knowledge of the consequences of trauma and disaster and to apply this knowledge to real world problems. Functions of the Center are as follows: 1) to develop and carry out research programs to further extend the knowledge of the medical/psychiatric consequences of trauma and disaster stress; 2) to provide consultation to pnvate and government agencies on the effects of trauma and disaster, health policies related to the medical care of traumatic stress victims, their families and communities, and, individual and organizational recovery following traumatic events; 3) to maintain an archive of medical literature on the health consequences of traumatic stress and traumatic events for individuals, families, organizations, communities, and nations; and, 4) to provide opportunities for postdoctoral training of medical scientists to develop research skills in order to better understand the health consequences of the stress produced by trauma and disasters.



Areas of Study. Twelve major projects are currently funded with over \$6 million from the following sources: the Department of Defense; the Department of the Army; the National Alliance for Research on Schizophrenia and Depression; the National Alliance for the Mentally I11 Research Institute; the National Institute on Drug Abuse; the Stanley Foundation; and the U.S. Marine Corps. Ongoing studies include the following areas: combat stress; the prevention of stress related disease; shipboard fires and emergencies; relocation stress; prisoners of war; leadership of those suffering from frief; medical personnel in disasters; traumatic stress and the immune function; community responses to disaster; identification of high risk populations; chronic stress; medical treatment following trauma; biomedical responses to stress; and, others.

Recently funded studies include: combat stress in Bosnian deployed troops; stress among emergency workers after an air disaster; stress mediators in the U.S. Army; psychological stress in the U.S. military deployed to Desert Storm/Shield; family violence and trauma; stress and women's health; combat, deployment, contingency operations and trauma; basic neurobiology of genetic and second messenger stress responses; stress and arousal symptoms in individuals and groups using the Persian Gulf War symptoms as a paradigm; disaster psychiatry education; program evaluation for the U.S. Army on the effects of breast cancer consumer participation in scientific peer review panels; natural disasters and health outcome: adult and adolescent responses to Hurricane Andrew; and, genetic risk for substance abuse and cognitive processing.

Focus of the Center's Eight Laboratories. The Center has eight research laboratories which concentrate on the following areas of study: Stress and Arousal in Individuals and Groups; Acoustic Startle/Stress Physiology; Sleep, Stress and Arousal; Social Function in High Stress Environments; Neurobiology of Stress; Family Violence and Trauma Project; Human Behavioral Pharmacology/Physiology; and, Substance Abuse.

Scope of Research/Consultative Efforts. The Center's staff serve as consultants to a large number of federal and nonfederal institutions involved with the understanding of responses to traumatic events and in the development of health policies. The Center's collaborative efforts in education and clinical research respond to the following entities: Federal - the U.S. Army, Navy, Air Force, and the Marine Corps of the Department of Defense; the Department of Veterans Affairs; the Department of State; the Agency for International Development; the National Aeronautics and Space Administration, the National Institute of Mental Health; the National Transportation Safety Board (Valujet crash in Florida); and, the Peace Corps; Private Sector - the American Medical Association; the American Psychiatric Association; the American Red Cross; the American Psychological Association; the Montgomery County School and Police Systems and the Maryland Offices of Motor Vehicles; the Oklahoma State Department of Health; and, the Los Angeles earthquake areas; International - the World Health Organization (consultation to Yugoslavia); the Soviet Union (Armenian Ministry of Health); the Singapore Armed Forces; the Disaster Stress Center of the University of Oslo, Norway; the University of Beirut, Lebanon; and, the Traumatic Stress Center of the Hadassah Medical Center, Jerusalem, Israel. Scientists from the USU Traumatic Stress Center and their international collaborators from Norway, Israel, and the Soviet Union are presently performing studies at USU to better understand the individual, community, national, and international responses to traumatic events.

Educational Activities. Another effort of the Center is its sponsorship of two trauma and disasterrelated programs: the Visiting Scientist Fellowship Program and the Military Psychiatry Fellowship Program. Graduates of these programs serve as catalysts to research, educational, and clinical programs throughout the world. Throughout 1998, the Center had a visiting scientist from the Japanese National Defense Medical College. Beginning in October 1998, the Center has hosted a total of four visiting scientists, one each from Japan, Singapore, Korea and Germany.

Preservation of Lessons Learned. The health implications of traumatic stress are a focused interest immediately following each trauma or disaster, but the data tends to be lost from institutional memory because of the lack of an organized center for the maintenance and development of the resulting information. The USU Center for Traumatic Stress has served the Military Health Services System by capturing, organizing and maintaining relevant information following disasters, terrorist events, and wars. Currently, the Center's basic computer data base (accessible to the Uniformed Services) provides over 10.000 items on traumatic stress.

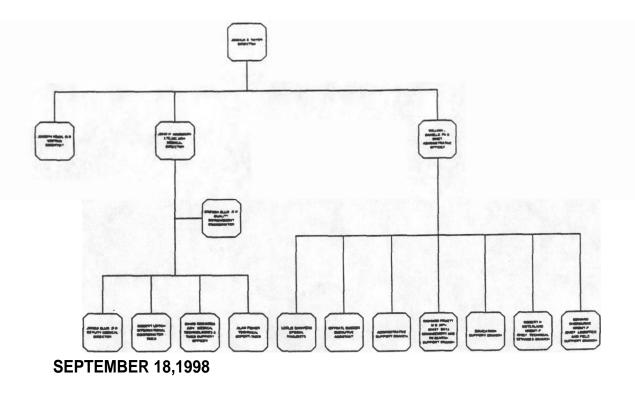
Recognized Resource. The USU Traumatic Stress Center, with its acknowledged experts and collaborative network of national and international scientists, is positioned to continue in its response to the special needs of the Military Health System as relevant requirements are identified in areas such as: 1) adaptation, recovery, and resiliency; 2) posttraumatic psychiatric illness; 3) neurobiology of stress; 4) medical illnesses developing as a consequence of traumatic stress; and, 5) the impact of traumatic stress on the health of individual family members, family units, and organizational and community functioning.

The USU School of Medicine Department of Military and Emergency Medicine and the Casualty Care Research Center.

Establishment and Mission. The Casualty Care Research Center (CCRC) was established in July of 1989 under the USU School of Medicine (SOM) Department of Military and Emergency Medicine as a center of excellence for injury control and casualty care research. In keeping with the overall mission of USUHS, the CCRC activities include the following: 1) conducts research and investigations of issues relating to injury control, casualty care, operational, and disaster medicine; 2) provides medical students, graduate physicians and other uniformed medical personnel with a disciplined, educational, research experience in combat casualty care, injury epidemiology, trauma management, and related areas; 3) maintains a strong collaborative relationship with other federal, state, and local agencies that share common interests in casualty care and operational medicine; 4) serves as a repository of resources and information relating to injury control, injury epidemiology, and operational medicine of the Uniformed Services; and, 5) provides research, resource and educational support, technical assistance, and other community service to USU, the Uniformed Services, and other federal, state and local elements. The Center operates entirely on extramural funding. Personnel within the USU Department of Military and Emergency Medicine participate in various activities of the CCRC based on their professional interests and as their teaching and clinical responsibilities permit. The Center's efforts fall into three categories: research, training, and consultation/operational support.

Research. Many research projects are in progress. Among them, the Naval Special Warfare Staged Combat Casualty Care Project seeks to develop a paradigm for the far-forward medical care of Navy SEALS and for the training of the Navy corpsmen who support them. Several consensus conferences have been conducted to help establish treatment approaches to special situations through a scenario-driven development and validation program.

CASUALTY CARE RESEARCH CENTER



Counter Narcotics Tactical Operations Medical Support (CONTOMS) Program, The CONTOMS Program began in 1990 as a cooperative effort between USU, the Department of Defense Office of Drug Enforcement Policy and Support, the Henry M. Jackson Foundation for the Advancement of Military Medicine, and the Department of Interior, U.S. Park Police Special Forces Branch. The CONTOMS Program was created to provide advanced medical training to federal, state, and local SWAT teams. It teaches skills that reduce the risk of death or serious injury in drug raids, hostage situations, and other high risk law enforcement operations. Due to its focus on special operations medicine, the CONTOMS Program, as part of the USU SOM Department of Military and Emergency Medicine's Casualty Care Research Center, is uniquely qualified to facilitate the adaptation of military medical science and experience for application in the civilian environment. At the same time, the Program's maturing relationship with the law enforcement community has resulted in the transfer of valuable knowledge, experience and technology for military medical application. In Fiscal Year 1998, eight emergency medical technicians-tactical (EMT-T) courses, three recertification courses, and two advanced courses were provided at various sites around the continental United States. Applications to the Program continue to exceed availability and many agencies require CONTOMS certification for entry level personnel. More than 371 law enforcement personnel were trained during Fiscal Year 1998. The CCRC, through the CONTOMS Program maintains the only national database on SWAT injuries. This information is used to guide the educational components of the CONTOMS Program and to explore similarities and differences between civilian law enforcement experience and military special operations experience.

The Wound Data and Munitions Effectiveness Team (Vietnam) database (WDMET) is maintained by the CCRC. It contains information on the tactical engagement, weapons employed, resulting injuries, and treatment in the prehospital and hospital environments on approximately 8,000 combat casualties. It is the ONLY collection of its kind in the world. Photographs, medical records, x-rays, recovered bullets and fragments make this a unique resource that has been studied extensively, resulting in approximately 25 scholarly publications since the Center was established in 1989.

Training. The CONTOMS Program is the Center's largest training effort. It has gained international interest and a sister-program has been initiated by Britain's Home Office. In response to increased requirements, the Advanced School was initiated in 1997. This 32-hour program addresses the advanced topics that are important to the practicing SWAT medic. In response to requirements from the law enforcement community, the Center introduced its Chemical-Biological Terrorism Awareness Course in 1995. Since that time, the eight-hour course has been taught regularly at training sites around the country. The Operational and Emergency Medical Skills Course, as previously mentioned, is taught three times each year and focuses on the extended care of trauma patients beyond the first six hours. The participants include medical students, graduate physicians, special operations medics from all Services, and selected federal law enforcement medics.

Consultation/Operational Support. In agreement with the philosophy that teachers and scholars must maintain an active practice in their area of expertise to ensure competency, the Center provides consultation and support to multiple organizations, including many federal law enforcement agencies. These activities are carried out under specific Memoranda of Understanding. On the average, the CCRC responds to at least one request for support each day. The CCRC's Mission Support Center is staffed by specially trained personnel and provides medical consultation, planning, and threat assessment support on a round-the-clock basis.

Telemedicine. The Telemedicine Sustainment Project commenced in September of 1996. Under this project, the CCRC is tasked to provide: 1) telemedicine training for both primary care and supporting hospital elements of the U.S. deployments in Bosnia; 2) in-theater clinical and technical continuation training; 3) telemedicine training and first-line technical support for the U.S. contingent of the United Nations' Force in Macedonia; 4) clinical advice and telemedicine needs assessments world-wide at the direction of the Telemedicine Research Laboratory; and, 5) maintenance and updating of the "Telemedicine Yellow Pages." CCRC has provided eleven deployed Telemedicine Courses in Germany, Bosnia, the continental United States, and Kuwait. Both clinical training and technical support were provided to Bosnia and Macedonia and technical support was provided to Saudi Arabia. The Telemedicine Yellow Pages were updated and digitized throughout Fiscal Year 1998.

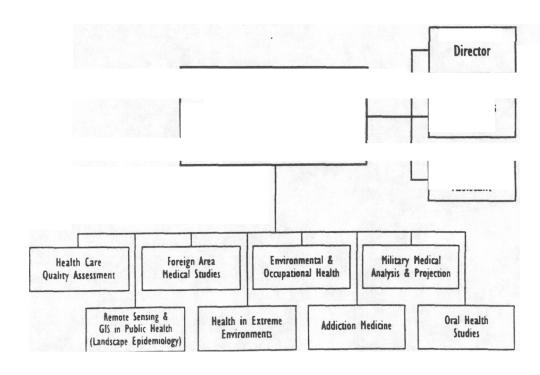
The USU School of Medicine Department of Preventive Medicine and Biometrics and the Centers for Preventive Medicine and Public Health.

One of Seven Accredited Resources. The USU School of Medicine Department of Preventive Medicine and Biometrics (PMB) has the distinction of being one of only seven accredited resources approved for course work in tropical medicine in the United States. During 1997, PMB continued its collaborative education agreements with the Walter Reed Army Medical Center Internal Medicine Fellowship Program, the Army Program in Health Services Administration, the Army/USPHS Laboratory Animal Medicine Program, the Navy Dental Research Institute and the Indian Health Service.

Graduate Education in Preventive Medicine. Public Health graduate education programs are offered through the USU-SOM Graduate Education Program. A total of 277 individuals have graduated from the Master of Public Health (MPH) Program; the Master of Tropical Medicine and Hygiene (MTM&H) Program has graduated a total of 21 personnel. PMB also offers residency training program in occupational medicine and preventive medicine.

Responsiveness to the Special Needs of the TriServices. In response to the request of the Military Health Services System, the TriService Advanced Military Tropical Medicine Course was offered at USU during the summers of 1996, 1997, and 1998. Under the auspices of the USUHS-SOM Department of Preventive Medicine and Biometrics, Department of Defense personnel receive education and training in tropical infectious diseases, which is an integral part of medical readiness training for foreign military operations.

Centers for Preventive Medicine and Public Health. The Centers for Preventive Medicine and Public Health (CPM/PH) are found within the USUHS-SOM Department of Preventive Medicine and Biometrics. The Centers operate under terms of a memorandum of understanding with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPM/PH combines broad expertise in research, consultation, education, training, and clinical preventive medicine and public health, to develop data bases and analyhe methodologies, prepare innovative curricula, and evaluate processes and outcomes in clinical practice. The following six Centers provided consultative and educational services to the TriServices during Fiscal Year 1998: Center for Health Care Quality Assessment and Improvement; Center for Landscape Epidemiology; Center for Foreign Area Medical Studies; Center for Health in Extreme Environments; Center for Training and Education in Addiction Medicine; and, the Center for Envi



Health Policies and Service. The Centers serve program managers and policy makers in the Department of Defense, other federal agencies, local governments and private organizations concerned with health policies and services. The Centers coordinate the resources of multiple separate centers of excellence to ensure that the appropriate collective expertise is applied. The CPM/PH enhances the stability and long-term effectiveness of USU and the Defense Health Program by attracting, retaining, and providing for the professional growth of outstanding faculty and staff, by providing high quality educational experiences to its students, and by promoting excellence in clinical preventive medicine and public health.

USU Department of Surgery's Center for Prostate Disease Research ... A Successful Collaborative Effort. Cancer molecular biologists in the Department of Surgery's Center for Prostate Disease Research (CPDR), in conjunction with the expertise and contributions of urologists at the Walter Reed Army Medical Center, notably, Colonel David G. McLeod, Chief of Urology, Adjunct, USU Professor of Surgery, and genito-urinary pathologists from the Armed Forces Institute of Pathology, are unraveling the mysteries of prostate cancer. Congress established the CPDR in 1991, and USU conducts the Department of Defense program in collaboration with the Henry M. Jackson Foundation for the Advancement of Military Medicine. The CPDR, under the leadership of Lieutenant Colonel (P) Judd W. Moul, MC, U.S. Army, Associate Professor of Surgery, focuses on identifying genetic prognostic markers that will help physicians determine the best treatment strategy for individual patients. The CPDR is also developing new molecular treatment strategies for prostate disease and is creating a multicenter database of DoD heath care system prostate cancer patients. The three main areas of research are genetic alterations/novel gene discovery, androgen regulation of the prostate growth, and preclinical strategies for gene therapy.

Predicting whether or not prostate cancer is likely to recur after radical prostatectomy (surgical removal of the prostate gland) has gotten easier and more precise due to a new biostatistical model developed by CPDR researchers. Results of their study were published in the March 1998 edition of the Journal of Urology. The model can easily be programmed into commonly used computer-based software, so that the variables can be entered and automated risk of recurrence calculated for the individual patient immediately after the surgical pathological results are known. This allows patients at high risk for recurrence to be identified shortly after surgery. The new biostatistical model is currently used at the Walter Reed Army Medical Center. Urologists there have access to the equation on the hospital's computer network. A patient's odds of recurrence may be determined by simply inputting variables into the computer. WRAMC physicians then use the results to more accurately counsel patients on their treatment options.

12th Conference on Military Medicine. From April 16 through 18, 1998, the 12th Conference on Military Medicine was held at Baltimore's R. Adams Cowley Shock Trauma Center of the University of Maryland Medical System. The conference was sponsored by USU in cooperation with the University of Maryland.

The 1998 topic for the conference was "Surgery for Victims of Conflict." The conference content included material associated with the War Surgery Course, which has been conducted by the International Committee of the Red Cross over the last decade. U.S. military and international civilian trauma surgeons

compared and contrasted current trauma surgical methodologies with those used in austere environments. The target audience consisted of general, trauma, and orthopedic surgeons; anesthesiologists; emergency medicine and critical care physicians; and, nurse anesthetists.

Conference topics included: Health Promotion in Armed Conflict; War Injuries - A Customer's Perspective; Changing Demands on the Medical Services; Ballistics, Blasts and Mines; Pain Control and Anesthesia; Limb Injuries - Simple to Complex; Mine Injuries and Amputations; and, Damage Control Surgery. There were also sessions on field anesthesia, advanced trauma life support in austere environments and nursing care.

The Conference on Military Medicine began in 1985 as a joint effort among USU, the University's Alumni Association, and the Henry M. Jackson Foundation for the Advancement of Military Medicine. The annual conference offers continuing medical education specific to military medicine and uniformed physicians through the USU Office of Continuing Education for Health Professionals. The Conference on Military Medicine is sponsored by the Department of Military and Emergency Medicine, in the School of Medicine.

The Collaborative Effort of the USU Neuroscience Research Program. Neuroscience is the study of the structure, development and function of the nervous system. This is the most complex organ in the body and it plays a regulatory role controlling or influencing the functions of all physiologic systems. Understanding the ways in which the brain and peripheral nervous system function requires a multidisciplinary approach. Over the last two decades, it became apparent to scientists working to understand the nervous system that an interdisciplinary approach to research and education in neuroscience was the only way that a comprehensive understanding of the functions of the nervous system can be achieved. Interdisciplinary programs in neuroscience such as those offered at USU draw on the skills of many basic science disciplines in an integrated effort to expand the knowledge of how the brain works, of how it becomes disturbed in various psychiatric and neurologic diseases, and of how we can use drugs or behavioral approaches to modify and correct malfunctions when they occur. The interdisciplinary USU Neuroscience Program has 41 faculty members in seven basic science departments: Anatomy and Cell Biology, Biochemistry, Microbiology and Immunology, Military and Emergency Medicine, Medical and Clinical Psychology, Physiology, and Pharmacology; and, four clinical departments: Psychiatry, Neurology, Pediatrics, and Anesthesiology. The research conducted by these 41 investigators spans the field from molecular neurobiology to behavior and clinical neuroscience.

The Interdisciplinary Graduate Education Program in Molecular and Cell Biology.

Modem biology has been revolutionized by developments in molecular and cellular biology. The developments cross traditional disciplines in such a way that they touch virtually every aspect of biomedical investigation. In recognition of this fact, some four years ago, the USU School of Medicine Office of Graduate Education formally established an interdisciplinary Graduate Education Program in Molecular and Cell Biology. The faculty, some 40 individuals, are full-time members of the Departments of Anatomy and Cell Biology, Biochemistry, Medicine, Microbiology and Immunology, Pathology, Pharmacology, Physiology, and other departments at the University who share an interest in cell structure

and function at the molecular and cellular level. The Program provides an opportunity for students to pursue classroom and laboratory study leading to the Doctor of Philosophy in Molecular and Cell Biology. In addition, the Molecular and Cell Biology Program serves as an opportunity for facilitating educational and scientific interactions between graduate and medical students and faculty at USU who share a common interest and contemporary approach to the study of cellular processes. A majority of the faculty have National Institutes of Health funded protocols and are published in prestigious journals including Science, Immunity, PNAS (Proceedings of the National Academy of Sciences, and the Journal of Experimental Medicine.

The Center for Informatics in Medicine. The Center for Informatics in Medicine was established in January of 1997, to serve as a focal point for academic activities involving the application of information technology to education, health care, and research. The Center has a two-fold mission: to enhance education and research in medical information through collaboration and communication; and, to promote the application of information technology for the betterment of the educational mission of the Schools of the University. During the latter part of Fiscal Year 1998, under the direction of the Dean, SOM, a committee was established to determine the appropriate responsibilities, resources, and feasibility of converting the Center to an academic department within the SOM. This effort will continue during Fiscal Year 1999.

Instruction.

Medical Student/Faculty Introduction to the Internet. USUHS Pre-matriculation Course/Medical Student Introduction to Computing at USU (also, Faculty Development - New Faculty - Introduction to the Internet) is a two hour presentation which incorporates a short didactic introduction and hands-on laboratory. It is supported by an Introduction to the Internet WWW (World-Wide-Web) site that can be accessed by anyone at USU for self-study or as a basis for an introductory lecture (http://cim.usuhs.mil/inet).

Introduction to Databases. MCB 501 Introduction to Computers for Graduate Students - Introduction to Databases is a four hour lecture/laboratory which introduces the students to database concepts and provides practical examples with a bibliographic citation manager (EndNote, ProCite, or RefMan) and molecular visualization using the RasMol application and the PDB database.

Software Development/Implementation.

TeleGenetics Web Site. This DoD-wide genetics service was deployed for the SOM Department of Obstetrics and Gynecology on the Center's servers. The site is intended to provide current, basic, and advanced information about genetics to the following: DoD primary care providers; specialist physicians; other health care providers; USU medical students, graduate students and researchers; and, interns, residents and fellows within the DoD Graduate Medical Education Programs (http://www.usuhs.mil/genetics/ or http://cim.usuhs.mil/genetics/).

Military Graduate Medical Education Web Site. Continued presentation of this site for USU, the SOM, and the Office of Educational Affairs is primarily a service function of the Center. The site is designed to provide a national, TriService forum for the University. Currently, the revised "Military Unique" Curricula is being deployed on the site (http://cim.usuhs.mil/dodgme/).

Master of Science in Nursing Completion Program for Certified Registered Nurse Anesthetist (NACP). The Center provided significant technology support throughout Fiscal Year 1998, and will continue to do so during Fiscal Year 1999, for the Graduate School of Nursing degree-granting, distance education program.

Epidemiology and Biostatistics MS1 Laboratory - Screening for Disease: AIDS in the Military (SOM/Preventive Medicine and Biometrics (PMB) Web Site. This demonstration project was designed to explore the feasibility of re-purposing a traditional lecture for presentation on the WWW. It was successfully completed and is currently deployed for MS 1 students at (http://cim.usuhs.mil/epi/).

Internet-Based Question Bank (QGen). This question bank with renal physiology as the content material was developed with faculty from the SOM Department of Physiology. This is the first implementation of a question bank by USU faculty with the TEKAMAH software.

Introduction to the Internet Web Site. This site can be used by anyone at the University for self study or as a basis for an introductory lecture describing the Internet. The site is deployed at http://cim.usuhs.mil/inet.

Educational Support. The Center has assumed responsibility for the faculty/video teleconferencing (VTC) interface. Support is provided to four efforts: 1) the SOM/PMB Winning the Managed Care Game Series for TRICARE Executive Training (15 to 70 sites); 2) the GSN DODNA Advanced Nurse Practitioner Series for certification (8 cites); 3) the SOM Obstetrics and Gynecology Clerkship Coordinators Student Evaluation Series; and, 4) the GSN Nurse Anesthesia Student Seminar Series (3 sites) The Center Director has also assumed responsibility for coordinating the inclusion of appropriate technology and related support in the National Capital Region Simulation and Readiness Center which is scheduled to open in October of 1999.

Educational Administration.

Student Assessment of Instruction (SAI). This effort, is coordinated with the SOM Office of Educational Affairs and has replaced a ten-year-old, Novell-based system that was available only in the USU Learning Resource Center. The new SAI system is web-based and instrument development and data retrieval is controlled by the groups performing the evaluation. Both the GSN and the SOM are using the system. Data reduction and analysis is provided in a spreadsheet or SPSS. Both the students and the University administration have strongly endorsed this system.

Student Introduction to Computing at USU. In coordination with the SOM Associate Dean for Medical Education, the Center has created an hour-long introduction to computing at USU and a two-hour, hands-on experience for incoming medical students. This effort has received excellent support from both the Learning Resource Center (LRC) and the Office of University Information Systems (UIS). Instruction is provided from staff in the Center, the LRC, and UIS. Additional support has also been provided by the MS2 student-volunteers.

MCB 501 Introduction to Computers for Graduate Students. This course is designed to introduce new MCB students to computers and computing at USU. Course material includes introductions to the following: navigating operating systems; word processing; spreadsheets; literature searching; databases (using reference management and molecular visualization as examples); internet tools; protein and DNA sequence analysis; statistical packages; graphics primitives; and, scientific presentation software.

USU Research Day/Graduate Student Colloquia Program. During the first two days of April 1998, USU held its Research Day/Graduate Student Colloquia Program. There were over 250 abstracts submitted for platform presentations and poster sessions. Oral presentation topics focused on cell function, injury and repair; immune and auto-immune function; trauma and resuscitation; neuroscience forms and function; therapies and diagnostics; and, stress. The objectives of Research Day were to showcase progress and stimulate research across diverse disciplines. The format included lectures and oral and poster presentations of abstracts. Barry Bloom, Ph.D., an investigator from the Howard Hughes Medical Institute and the Weinstock Professor of Microbiology and Immunology at the Albert Einstein College of Medicine in New York, was the keynote speaker at the Research Day dinner on April 1st.

Researcher from Medical and Clinical Psychology has a Front-Line Role in DoD's Effort Against Smoking. For years, the Department of Defense has advocated tobacco prevention and cessation programs. Neil Grunberg, Ph.D., Professor of Medical and Clinical Psychology and Professor of Neuroscience, serves as a consultant to the Army, Navy and Air Force Surgeons General. Over the past twenty years, Dr. Grunberg and his graduate students and laboratory technicians have produced more than 120 articles on the use of tobacco. Their studies have researched the specific effects of nicotine that explain its wide usage, to include lowering body weight, controlling appetite, enhancing the attention span, and reducing levels of stress and pain. Additionally, Dr. Grunberg's studies illustrate how the biological and biochemical effects of nicotine intertwine with psychological, behavioral and situational variables, such as the sight and smell of cigarette smoke, to reinforce the use of tobacco.

The Department of Defense has had great interest in smoking prevention and cessation. Prevalence of tobacco use in the military, approximately 30 percent, exceeds the use of tobacco in the civilian population, which is currently estimated at 25 percent. Among military personnel, tobacco use is inversely related to rank, with 40 percent or more of E-1 to E-3 personnel smoking cigarettes. Dr. Grunberg has pointed out that the prevalence of smoking may increase with enlistment, in part, due to peer pressure, but also because of nicotine's role in areas such as stress reduction and attention focus. There is also the ever-present concern of military readiness. Besides the obvious concerns of preventive medicine, there are many settings where the abstinence from tobacco use must be mandated due to health and safety concerns. At such times, it is not conducive to military readiness if uniformed personnel are distracted by nicotine withdrawal when their attention must be focused on the operational effort.

While Dr. Grunberg's work for DoD continues, since February of 1998, he has participated in a new tobacco program aimed at a critical audience - children. The Robert Wood Johnson Foundation Youth Tobacco Prevention Initiative (YTPI) is a collaborative effort among scientists, practitioners, health policy professionals, health care professionals, and educators, from both the private and public sectors, in the United States and Canada. The YTPI is working to raise the quantity, quality and effectiveness of

tobacco use prevention research for youths. To accomplish this, the YTPI is divided into seven working groups, each chaired by a leader in tobacco research. Dr. Grunberg, as the Scientific Director of YTPI, played an essential role in recruiting the chairs for the working groups, and has assisted each in developing initial tasks and selecting potential members, Group leaders present substantial expertise and represent the Office on Smoking and Health, the U.S. Centers for Disease Control, the Addiction Research Foundation of Ontario, Canada, the American Cancer Society, and, the Uniformed Services University of the Health Sciences.

"Detective Work and Science Reveal a New Lethal Bacteria," The New York Times, page Al, Jannary 6,1998. The major area of research in the laboratory of Alison D. O'Brien, Ph.D., Chair and Professor, Department of Microbiology and Immunology, is the study of a group of pathogenic E. coli strains that cause food-poisoning or "hamburger disease." These food-borne outbreaks are usually associated with contaminated hamburger meat that is undercooked; however, contaminated juices, fruits, vegetables, and milk are also sources of infection. E. coli 0157 is the leading cause of bloody diarrhea in the United States. A condition called the hemolytic uremic syndrome infrequently follows the initial diarrheal infection; this syndrome can be fatal due to severe damage to the kidneys. These pathogenic E. coli bacteria have been named Shiga toxin-producing E. coli, or STEC, because they produce a potent toxin, Shiga toxin, that is responsible for many of the symptoms of disease. "Dr. O'Brien examined the rogue E. coli and discovered that it had somehow taken on the Shigelia toxin gene. Moreover, in many of the E. Coli, that gene was slightly altered in a way that made the bacterium produce toxin even deadlier than the original toxin made by Shigella. No one know exactly how the Shigella toxin genes jumped to E. Coli, but Dr. O'Brien has an educated guess. Viruses that infect bacteria can sometimes pick up a gene from one bacterium and carry it to another.... However, when the toxin does its work ... the result is that it can injure cells that line blood vessels, plugging them with blood clots. When this happens, the first symptom is bloody diarrhea. But a small proportion of people, especially young children and the elderly, develop hemolytic uremic syndrome, the actual destruction of the kidneys ..." (New York Times article cited above, page A14). The New York Times article describes in detail how scientists believe a virus, which invades cells like bacteria to reproduce, somehow carries a toxin-producing gene from Shigella, the bacteria that has caused various epidemics, over to the E. coli. Dr. O'Brien is credited as the source of article's flow chart depicting this process.

Other areas of research interest in Dr. O'Brien's laboratory include the pathogenesis of Salmonella typhimurium, a bacterium that causes approximately one million cases of food poisoning in the United States each year; and, a newly discovered toxin, cytotoxic necrotizing factor, which is made by bacteria that cause urinary tract infections.

Two Researchers from the Department of Medicine Document the Decline in Physician (Civilian) House Calls. Despite an explosive growth in the civilian sector in home care services to the Nation's elderly, the former "pillar" of home care, the physician house call, has declined dramatically over the century. In a study published in the December 18, 1998, edition of the New England Journal of Medicine, investigators at USU documented that this decline is continuing. Using data from the Medicare program, two Assistant Professors from the Department of Medicine, Major Gregg Meyer, MC, U.S. Air Force, and Captain Robert Gibbons, MC, U.S. Army, found that 727,000 house calls were made to the aged non-HMO Medicare population at a cost of \$63 million in 1993 (at an average cost of \$87.00).

This represents a decline of 3 1 percent since 1988. That decline appears to be continuing, with a further reduction of 12.3 percent in the number of house calls billed to Medicare in 1996.

Despite the reduction in the number of house calls, Major Meyer and Captain Gibbons found that these services continued to play an important role in the care of elderly Americans, particularly those who are older, have high rates of hospitalization, or are near death. These findings suggest that physician house calls may substitute for hospice and hospital services for terminal patients whose prognosis is not as well-defined as those in hospice. There was substantial regional variation in the provision of house calls, with patients residing in rural areas and those in areas with greater availability of physicians being more likely to receive these traditional services. Primary care physicians who were older, board-certified, practiced in the northeastern United States, and were in solo practice were the most likely to perform house calls. Recent health trends such as: competition in the physician workforce that have led to a growth in alternative practice settings such as the home; the growth of Geriatrics; an aging population for whom house calls may be appropriate; availability of mobile technology; and, increases in reimbursement may now be developing. All of which favor a resurgence in house calls. In the next phase of their analysis, the USU researchers plan to examine the value of physician house calls vis a vis alternative home care services in terms of cost, safety, and effectiveness. Until evidence supporting the value of physician house calls is available, the retention of physician house calls as part of the American health care landscape will remain dependent on the appreciation that house calls are a vital part of medicine; a link to the past; and, provide a unique opportunity for service, commitment and compassion.



III. THE GRADUATE SCHOOL OF NURSING

BACKGROUND

Establishment. The establishing legislation of USU directed that USU must meet the requirements of medical readiness and expand to meet the future needs of the Uniformed Services. Following the identification of a need for advanced practice nurses by the Federal Nursing Chiefs, in 1993, the Congress called for a demonstration program for the preparation of family nurse practitioners for the Uniformed Services. Within three years, the USU Graduate School of Nursing (GSN) was approved by Health Affairs, Office of the Secretary of Defense, on February 26, 1996. (The Federal Nursing Chiefs include representatives from the Army, Navy, Air Force, Public Health Service, and the Department of Veterans Affairs. The American Red Cross, although not a federal agency, has a representative on the Federal Nursing Chiefs Advisory Council.)

Mission. The mission of the GSN is to prepare advanced practice nurses (APNs) at the graduate level to deliver primary and chronic care, including anesthesia services, to active duty members of the Uniformed Services, their families, and all other eligible beneficiaries. Students are provided military unique education in the multiservice environment of USU which also includes the United States Public Health Service (USPHS). Graduates are prepared to deliver care in a wide variety of settings and communities, both nationally and internationally. GSN graduates are equipped to contribute to the Uniformed Services' peacetime health care delivery systems and to provide military and public health support during combat operations, civil disasters, and humanitarian missions. They may serve in clinics, hospitals and air evacuation units in the combat zone of a theater of operations under austere and harsh conditions, at sea on ships of war, or in isolated areas of the United States and other countries where other health care providers may be nonexistent. The major emphasis is on the nursing perspective of health promotion and disease prevention within the context of primary care as determined by the Federal Nursing Chiefs.

Two GSN Programs. The GSN's two programs, the Family Nurse Practitioner (FNP) and the Certified Registered Nurse Anesthesia (CRNA) Programs, are designed to alleviate shortages of health care providers in the Uniformed Services as identified by the Federal Nursing Chiefs. The FNP Program has a total of 27 students; is currently 21 months in length; and, includes 54 academic credits with 720 hours of clinical experience. (In June of 1999, the FNP Program will increase to 24 months to allow for the integration of women's health competencies.) There are also four uniformed officers enrolled in a resident, one-year Post-Master's FNP Program that retrains advanced practice nurses with specialties that are required by the Services. The CRNA Program has a total of 37 students; is 27 months in length; and, includes 72 academic credits and 2,000 hours of clinical experience. The Federal Nursing Chiefs have determined that these two advanced nurse practitioner specialties currently meet the requirements of the Uniformed Services. Graduates from the GSN receive a Master of Science in Nursing (MSN) Degree and qualify for national certification in their specialties. A total of 60 uniformed advanced practice nurses have received Masters of Science in Nursing Degrees from the USUHS GSN and remain on active duty in their respective Services throughout the world.

ACCREDITATION

Accreditation Granted by the Council on Accreditation of Nurse Anesthesia Educational Programs. In April of 1994, the GSN Certified Registered Nurse Anesthesia (CRNA) Program was granted initial accreditation by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA), permitting the admission of students to the program. Eight students, admitted in June of 1994, completed 27 months of full time study and graduated in the Fall of 1996. Eleven students were admitted into the program in June of 1995; and, thirteen were admitted in June of 1996. Twenty-five students were admitted to the Nurse Anesthesia Program in June of 1997; and, thirteen were admitted in 1998. A total of 70 active duty officers have entered the GSN CRNA Program since its establishment. Following an intensive review and site visit by the COA, in October of 1997, the GSN Nurse Anesthesia Program received full accreditation through September of 2003. (The FNP Program does not have a separate accrediting agency; it is accredited under the National League for Nursing.)

National League for Nursing Accreditation. In December of 1996, the Board of Review for Baccalaureate and Higher Degree Programs evaluated, for the National League for Nursing (NLN) accreditation, the Master's Degree Program offered by the USU GSN. The NLN Board of Review voted to grant accreditation to the USU GSN Master's Degree Program in Nursing and scheduled its next visit for reaccreditation for the Fall of 2001.

Preliminary Accreditation Granted by the American Association of Colleges of Nursing. An accreditation program for nursing programs has recently been implemented by the American Association of Colleges of Nursing (AACN) Commission on Collegiate Nursing Education (CCNE). The GSN prepared and submitted material to meet the CCNE requirements for preliminary accreditation (a special accreditation for programs that have received recent national accreditation from other organizations such as the NLN). That material was accepted and the AACN/CCNE granted preliminary accreditation on February 27, 1998. A site visit by the AACN is scheduled in the Fall of 2001.

Sponsorship for the Honor Society of Nursing is Granted. Also during Fiscal Year 1998, the USU Graduate School of Nursing was informed that it has been approved by Sigma Theta Tau to sponsor an Honor Society of Nursing.

JOINT SERVICE ENVIRONMENT

Advanced Nursing Education in a Joint Service Environment. The GSN faculty and staff believe that the placement of the GSN within the interdisciplinary boundaries of USU is a distinct strength. The Quad Service environment of USU including the Army, Navy, Air Force, and USPHS offers a unique blend of interactive didactic and clinical experiences which support the preparation of competent advanced practice nurses for service to the Nation during international conflict and in peacetime when humanitarian services and disaster relief are required. Clinical practice sites include both military and civilian hospitals

and primary care healthcare clinics located primarily in the Washington, D.C. area. Recognizing the unique environment at USU, in 1997, the Air Force assigned all of the Air Force students who are approved for training as nurse anesthetists to the USU GSN.

To meet the MHS readiness requirements, it is essential that its professional healthcare officers are familiar with the structure of a joint command. Under the leadership of the USU Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the GSN must participate in all activities and events as they would in any other command of the Uniformed Services. Regular military formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed; and, uniformed personnel in the GSN are trained in the appropriate uniformed programs and customs. The students of the GSN participate in joint-service educational experiences throughout their Master's Degree programs and, as a result, become familiar with the regulations, procedures, and vocabularies of the Quad Services' healthcare programs.

STUDENT AFFAIRS

The Selection Process. A commitment to the Nation must be evidenced in an applicant's decision to attend the GSN. The GSN Admissions Committee makes the final determination regarding student admission to the GSN with the concurrence of the Dean. The membership of the Admissions Committee is different from those at other schools of nursing. In addition to members of the GSN faculty, the Committee has representatives from each of the Uniformed Services and faculty from the School of Medicine. The composition of the Committee reflects two critical principles of the GSN: 1) the nature of health care, particularly within the Uniformed Services, requires an interdisciplinary approach; and, 2) the Services select candidates for promotion and school attendance on the basis of the "whole person" concept.

The applicant pool is unique. The Army, Navy, Air Force, and U.S. Public Health Service preselect and approve candidates for application to the GSN according to Service specific criteria. Once applicants have been selected by their specific Service, they may then apply to the GSN. The Admissions Committee of the GSN reviews the applicants' records not only on the basis of academic merit which evidences that the applicants can succeed in a graduate program, but also on the basis of officership and commitment to their particular Uniformed Service. Academic aptitude is balanced against the evidence of future officership and continuing commitment to service in the Uniformed Services. The candidates nominated by the Uniformed Services have had a grade point average of between 3.8 and 4.0 in their Baccalaureate Programs; they have also had an average of between eight to twelve years of experience in the Uniformed Services. Annually, the GSN reviews approximately 75 applicants and admits between 25 to 37 students per year. The Federal Nursing Chiefs have continued to evidence their tremendous support for the GSN by sending extraordinary students to the USU.

Class of 2000. The USU GSN welcomed the Class of 2000 during August of 1998. Fourteen officers enrolled in the Nurse Practitioner Program (bringing the total FNP enrollment to a total of 27 students) and thirteen uniformed officers were enrolled in the Nurse Anesthesia Program (bringing the total NA enrollment to a total of 37 students).

During 1998, 27 uniformed officers were enrolled as GSN students: six are members of the Army; two are Navy officers; 16 are members of the Air Force; and, three are members of the Public Health Service. The GSN students range in rank from 0-1 to 0-5 with the majority at the 0-3 level. The students will pay back two to three years for each year of education received at the GSN, depending upon their individual Service. During August of 1998, the GSN also enrolled four Army officers in a resident, one-year, Post-Master's FNP Program to retrain advanced practice nurses in a specialty required by the Services.

CURRICULA

GSN Response to the Special Needs of the Uniformed Services. The USU GSN is unique among the Nation's nursing programs because it must educate students to treat and care for both civilian and military personnel, in peace, war, disaster, or other situations that are under austere conditions. The GSN curricula are driven by special requirements to meet the missions of the DoD and the USPHS. Common to the GSN academic courses is subject matter that is relevant to military health care providers; for example, there are operational readiness components to each course. Continuous consultation has taken place with the Federal Nursing Chiefs during the development and review of the GSN curricula in order to assure that the special needs of the Uniformed Services are being met by the GSN graduates. In concurrence with the Federal Nursing Chiefs' indications that the career advancement of their officers would be enhanced through the completion of a Master's thesis, the GSN examined the feasibility of the completion of a thesis within the time constraints of its programs. Based on the assessment of multiple program components, including an assessment of the graduating students' research projects and faculty expertise, a master's thesis, which would become an extension of the charter students' research projects, was made a requirement for all graduating students, beginning with the graduating Class of 1996 and continuing with the Class of 2000. Another example occurred when the 1995 graduates of the GSN recommended the inclusion of training in the procedures for such requirements as suturing, basic laboratory testing, and triage; the GSN faculty elected to incorporate those procedures into the appropriate GSN courses. The FNP students also recommended the addition of Anatomy into the curriculum which will occur in June of 1999.

Medical Readiness Training. The 68 uniformed officers currently enrolled in the GSN receive operational medicine and military relevant material and training in their academic courses throughout the curriculum. There is also a one-week, Operational Readiness Course which is totally devoted to readiness-related issues and associated clinical problems. With the approval of the Federal Nursing Chiefs, beginning in January of 2000, GSN students will participate in Operation Bushmaster as part of the Operational Readiness Course which will be expanded by three weeks. Nursing students will train in a third echelon environment, but they will be provided exposure to the first and second echelon where the School of Medicine students receive training. The GSN has a Commandant who is rated by the USU Brigade Commander. The Commandant provides mentorship and guidance related to leadership, military customs and traditions, administrative requirements, and protocols to all of the uniformed officers enrolled in the GSN.

Nurse Practitioner Department. In addition to the overall mission of the GSN as previously noted, the GSN curricula prepare advanced practice nurses who are educated to: 1) assume positions of uniformed leadership within areas of specialization in the Uniformed Services; 2) contribute to nursing scholarship as required by the Uniformed Services; 3) conduct and evaluate research on expanded nursing roles in clinical practice especially in areas identified by the Federal Nursing Chiefs; 4) conduct and evaluate research in the management of the health/illness continuum in the Uniformed Services; and, 5) further the role of the advanced practice nursing profession within the Uniformed Services. These criteria are constantly reviewed and discussed with the Federal Nursing Chiefs to assure both consistency and accuracy in the GSN's response to the special needs of the Uniformed Services.

Adult Nurse Practitioner Post-Master's Distance Learning Program. The USU Graduate School of Nursing (GSN), in cooperation with the Department of Veterans Affairs (VA) and the DoD, has implemented a fifteen-month program that prepares advanced practice clinical nurse specialists to diagnose and manage primary health care problems of adults. The Adult Nurse Practitioner Post-Master's Program, also known as the VA/DoD Distance Learning Program, provides education or training courses at eight remote (off campus) locations via audio, video or computer technologies. The cumculum emphasizes comprehensive physical and psycho-social assessment, decision-making processes in both acute and chronic health conditions, and health maintenance care. The Program stresses both health promotion and disease prevention.

The Distance Learning Program is composed of didactic course work delivered via state-of-the-art distance learning technology, including interactive video teleconferencing and the Internet. Written correspondence and supervised clinical experience occurring in the students' home area are also included in the cumculum. Students receive a broad foundation of educational preparation in adult health, advanced nursing practice, nursing theory, and nursing research. Health assessment, primary prevention, health maintenance, clinical decision making, illness management and pharmacology (including writing prescriptions) are emphasized in the classroom and clinical practicum.

The Distance Learning Program was initiated following a directive issued by the Veterans Administration Undersecretary of Health calling for a 200 percent increase in the number of nurse practitioners in VA health care facilities. Coordination took place between the VA and the GSN to provide a curriculum that would transition VA clinical nurse specialists into the role of nurse practitioners. The faculty for the Distance Learning Program are primarily certified nurse practitioners and basic science faculty from USU. The GSN monitors the teaching and conducts evaluations to make certain that all standards for certification are met. Preceptors are located at each site to ensure that the curriculum being presented by the distance learning classroom at USU is comprehended and that questions are resolved immediately at each of the sites. All preceptors working with the distance learning program have been appointed to the Department of Nurse Practitioner as adjunct clinical faculty following University protocol and policy. Graduates of the Distance Learning Program will be able to deliver, coordinate and evaluate high-quality care; advocate for vulnerable individuals and groups; and, be leaders in influencing the health care delivery systems by promoting and maintaining adult health. Early graduates of the Program will assume clinical positions within the Department of Veterans Affairs. Later graduates are scheduled to work with the U.S. Public Health Service, the Bureau of Prisons, or the Indian Health Service. Graduates will be eligible to sit for the American Nurses Association credentialing examination for adult nurse practitioners. Thirty-seven students are currently participating in the program at eight sites; Atlanta, Georgia; Baltimore, Maryland; Bronx, New York; Charleston, South Carolina; Fayetteville, North Carolina; Fort Leavenworth, Kansas; San Diego, California; and, West Los Angeles, California. The GSN extended its network of high-speed digital telephone lines from USU's compressed-video classroom to Martinsburgh, West Virginia (the hub) which in tum is linked to the eight sites. Plans are under way to adapt the course work for the World Wide Web, allowing students to undertake collaborative projects, complete exercises and take examinations over the Internet. The Distance Learning Program has been implemented due to extensive coordination by the following individuals: the Dean, GSN; the GSN Distance Learning Advisor; the Chair, GSN Nurse Practitioner Department; the GSN faculty; the Director of the USU Center for Informatics in Medicine; and, the VA Program Director and two VA On-Site Coordinators, Eight separate Graduations are scheduled to take place at each of the sites in June, 1999.

Nurse Anesthesia Department.

Clinical Instruction. The Nurse Anesthesia students perform their clinical work at eleven hospitals in the Washington, D.C., area which include: the Malcolm Grow Air Force Medical Center; Andrews Air Force Base, Maryland; DeWitt Army Community Hospital, Fort Belvoir, Virginia; Travis Air Force Base Hospital, California; Wright Patterson Hospital in Dayton, Ohio; the Washington Hospital Center, Washington, D.C.; the Greater Southeast Community Hospital; and, St. Christopher's Hospital for Children in Philadelphia, Pennsylvania.

Thesis Research. Each graduating class must complete individual thesis research before graduation from the GSN. The students' research generally has applications to anesthesia practice and includes bench studies, qualitative research, surveys, and clinical studies. All topics must be relevant to the Uniformed Services.

Patient Simulator ... Realistic Training through Advanced Technology. The patient simulator has previously been addressed in Part II, the Curriculum section, the School of Medicine, of this report. The USU's GSN program for Nurse Anesthetists utilizes the patient simulator for training as well as for evaluation. First, the GSN students receive simulator training in anesthesia induction procedures. After extensive class room study, the students return to the simulation area where each student is presented with his/her own unique (simulated) case. These cases include specific (simulated) patients superimposed with complicating events which could occur during the anesthesia induction process. The GSN students combine everything they have learned about the physiology of gas exchange and physiologic and pharmacologic responses and actually perform the procedures and administer anesthesia, without putting human patients, or themselves, at risk.

Innovative Teaching of Traditional Nurse Anesthesia Topics. Contemporary training of nurse anesthesia students requires innovative technologies while maintaining traditional, proven techniques. The Council on Accreditation for Nurse Anesthetists (COA) outlines a variety of requirements related to the nervous system including regional blocks which students must master for the successful administration of anesthesia. To meet these requirements, a unique program is being taught by a diversified clinical and basic science faculty drawn from the GSN, the School of Medicine, affiliated hospitals, and federal agencies. Three courses are taught in the summer and fall semesters and are coordinated by **Donald D. Rigamonti, Ph.D., a neuroscientist in the GSN Department of Nurse Anesthesia.** They are Anatomy/Cell Biology and Neuroscience I and II. The summer semester provides an extensive use of a "state-of-the-art" anatomy teaching laboratory where regional anesthesia is demonstrated. Both the laboratory and regional anesthesia teaching were cited as highlights by the COA site reviewers. The classrooms and library have several software packages "on line" and these are used during the

Anatomy/Cell Biology Course. Neuroscience I is also taught in the summer and provides a review of basic neurophysiological concepts and an examination of gross central and peripheral nervous system structures. Neuroscience II is taught in the fall semester; it provides an in-depth review of neurophysiological concepts related to peripheral nerves, spinal cord segments and the brain. These principles are demonstrated in laboratories utilizing human subjects and computer-assisted data acquisition. In addition, computer-aided instruction is routinely used to teach human anatomy, cell biology, and nervous system structure and function. Throughout their courses of instruction, individual students are assigned lecture topics; the students then select laboratory sessions and lead discussions with visiting faculty and study groups. During these classes, the lectures, student notes and clinical questions are recorded on computer disks; the GSN will make this information available on the Internet once resources are identified. These courses utilize the Visible Human Project, which is available through the National Library of Medicine; this resource offers the possibility of simulating anesthetic procedures in the virtual environment.

Pilot Distance Learning Project for Certified Registered Nurse Anesthetists Master of Science in Nursing Completion Program. A pilot distance learning Master of Science in Nursing Completion Program is being offered by the USU GSN for Certified Registered Nurse Anesthetists (CRNAs). The project is funded by a grant awarded in August of 1998. The purpose of the project is to explore several distance learning technologies. Prior to the awarding of the grant, two classes, Medical Pharmacology and Role Development were delivered to distant sites. These distance courses were provided by videotaping didactic lectures, along with group discussions conducted via the Internet. The taping and group discussion strategies proved successful as evidenced by a variety of outcome measures, including student examinations, written assignments, and course evaluations. As part of this grant, GSN Course 0514, Health Assessment, is being provided to six distance sites by taping didactic and demonstration lectures. Demonstrations were professionally videotaped. The tapes were duplicated and sent to the six students enrolled in the pilot program. At this time, group discussion on the Internet indicates that the tapes of the demonstration lectures were determined to be a quality product. Additionally, the principal investigator is keeping detailed anecdotal records for both documentation and evaluation of the project. The documentation will be used to determine the effectiveness in adapting a traditional lecture and demonstration course to video-lectures combined with live discussions and review sessions over the Internet.

The grant also provides funding for generating a CD-ROM of the Nursing Theory and Research Course (GSN 051 1). This course is currently taught to all GSN students. Faculty lectures have been converted to PowerPoint presentations and are being audiotaped. These will then be digitized in Photo CD format and will be transferred onto a CD-ROM. The "distance" students will receive the CD-ROM along with course-related materials in January 1999. The course will also include an Internet-based asynchronous conference facility to allow interaction between students, faculty, and the course director. Students will be evaluated by comparing course grades and evaluations with those from the GSN students who take the course on the USU campus. Again, the principal investigator is generating detailed records for both documentation and evaluation of the desirability of adapting traditional lecture courses to CD-ROMs for distance learning.

The Nursing Research Department.

Background. The Nursing Reseach Department was established to assist the educational programs in the GSN. This department allocates approximately 80 percent of its resources to provide the following support: guidance and individual support to all GSN students for their mandated thesis research; instruction of course work for the two nursing programs; coordination for the distance learning programs; leadership for the Electronic Military/Uniformed Services Nursing Reseach (EMUSNR) database effort; and, executive guidance for the GSN Science and Engineering Apprentice Program.

Electronic Access to Military/Uniformed Services Nursing Research. The Electronic Military/Uniformed Services Nursing Research (EMUSNR) database emerged from the Federal Nursing Chiefs Council. The Council approved the formation of a Task Force with a goal to "design and develop an electronic bibliographic storage retrieval database for nursing research documents in the military and uniformed services." Virginia K. Saba, Ph.D., was appointed as the Chair of the Task Force. Dr. Saba is a Professor and Advisor on Educational Technologies in the Nursing and Research Department. Barbara Sylvia, Ph.D., Associate Professor and Chair, GSN Nursing Research Department, also was appointed to the Task Force.

Following the guidance of the Task Force, the development of an Electronic Military/Uniformed Services Nursing Research (EMUSNR) database was initiated by the GSN. The database was designed with the assistance of CINAHL Information Systems (Cumulative Index to Nursing and Allied Health Literature), as an integral component of the newly created special interest category for the military and uniformed services; EMUSNR, included as a virtual database in the CINAHL, is the first of its kind. This database will provide electronic access to military and uniformed services nursing research documents that have been previously available in only selected and diverse locations.

The newly created EMUSNR database will allow easy access to documents completed by graduate students at the GSN and the final reports of the TriService Nursing Research Grant Program. The EMUSNR offers electronic searching and retrieval of bibliographic citations to the respective nursing research documents. Those documents will be fully indexed and will consist of the following characteristics: relevant military/uniformed services subject headings; a 200 to 300 word informative abstract; 5 to 15 cited references; and, a description of research methods, instruments and other research concepts. Also, when appropriate, the full text of brief research reports will also be incorporated. It is expected that this database will be of benefit to the Military Health System.

The Science and Engineering Apprentice Program. For the past three summers, the GSN, through the executive coordination provided by **Eugene Levine**, **Ph.D.**, **Professor**, **Department of Nursing Research**, has participated in the Science and Engineering Apprentice Program (SEAP) which is sponsored by the DoD. This program assigns high school students, who are selected competitively, to various agencies such as the USU/GSN. The students spend eight weeks during their summer break working on projects of a scientific or technical nature.

A total of six students have been assigned to the GSN since it began participating in the program. These students were involved in a variety of projects which include: developing a data base to analyze the characteristics of applicants to the GSN; conducting a survey of textbooks used in pathophysiology courses for advanced practice nurses; and, evaluating outcomes of a distance learning project. The SEAP program has benefitted both the students and the GSN. The high productivity of the students, combined with the quality of their work, resulted in significant progress on a variety of GSN projects. Also, as

related to their assigned projects, the students visited' the University of Maryland's Shock Trauma Center, the National Library of Medicine, and the Clinical Center of the National Institute of Health. The GSN coordinators have followed the progress of their SEAP students; two students have graduated from high school with one entering Princeton University and the other Swarthmore College. The students reported that their SEAP experiences enhanced their acceptance to these schools. A third student is currently applying to the Naval Academy; and all six students have expressed interest in pursuing studies leading to careers in the health sciences.

GSN ALUMNI

Graduate Profile. The GSN has a total of 60 uniformed graduates: Army - 9; Navy - 5; Air Force - 43; and, Public Health Service - 3. Thirty-three uniformed officers have graduated from the Nurse Anesthesia Program; and, twenty-seven uniformed officers have received advanced degrees from the Nurse Practitioner Program. All GSN graduates remain on active duty in their individual services. The GSN alumni do not have a formal residency requirement so they go directly into clinical practice, consistent with credentialing guidelines at the individual health care facilities. The GSN alumni can expect to serve at least one tour as practitioners or anesthetists before being considered for assignments in any other role. All GSN graduates are currently practicing as family nurse practitioners or as certified registered nurse anesthetists. All GSN graduates have passed the national certification examination; 94.9% have passed on their initial examination at the upper percentile.

The immediate measurable standard of success for GSN alumni is the passing of the National Certification Examinations. The next short term measure is their successful performance as advanced practice nurses as determined by their immediate supervisors. Several members of the GSN faculty have been tasked with designing a tool to effectively measure alumni performance and to provide reports on such to the Dean, GSN, and the Federal Nursing Chiefs. Reviews of these reports will ensure that the GSN curriculum is meeting the requirements of the Uniformed Services.

The GSN Alumni have three ultimate career tracts: clinical, administrative, and research. There are a number of "nontraditional" and operational assignments available as well; however, only a limited number of Alumni would be expected to pursue those assignments. New avenues for command and staff positions are continuously opening for advanced practice nurses. It is expected that the GSN Alumni will continue to be recognized and rewarded for their outstanding performance with career assignments of ever-increasing responsibility.

GSN Outstanding Student Awards.

Nurse Anesthesia Program. **Captain David Grasso, U.S. Army,** AN, distinguished himself as a student in the Nurse Anesthesia Program of the Graduate School of Nursing. His dedication to excellence made him a role model for the other officers and advanced practice nurses. The level of knowledge and clinical expertise that he provided made him essential to the acceptance of the students of the Nurse Anesthesia Program at the diverse GSN clinical sites. He consistently exemplified the highest ideals of both the military and healing professions.

Family Nurse Practitioner Program. **Major Tamara Link, U.S. Air Force, NC,** distinguished herself as a student in the Family Nurse Practitioner Program of the Graduate School of Nursing. She employed a sound scientific foundation, an inquiring mind, and a collaborative approach to the comprehensive care of her patients. Major Link demonstrated personal initiative, perseverance, and outstanding character throughout her academic endeavors at USU.

Academic Performance Awards. **Captain David Cherni, U.S. Army,** AN, received the Distinguished Academic Performance Award, Nurse Anesthesia Program, which recognizes the graduating student having the most outstanding academic proficiency in a nursing program. **Major Tamara Link, U.S. Air Force, NC,** received the Distinguished Academic Performance Award, Family Nurse Practitioner Program.

Distinguished Clinical Performance Awards. **Major Rick Wade**, U.S. Air Force, NC, received the Distinguished Clinical Performance Award, Nurse Anesthesia Program. **Major Bridget Larew**, U.S. Air Force, NC, received the Distinguished Clinical Performance Award, Family Nurse Practitioner Program.

Special Recognition of 1998 Thesis. Captain Terrence McManus, Family Nurse Practitioner graduate of the Class of 1998, was recognized for his collaboration with Andre Dubois, M.D., Ph.D., Research Associate Professor, Department of Medicine, when he presented his findings at the Association of Military Surgeons of the United States (AMSUS) Annual Meeting. Captain Terrence's thesis was titled, "Prevalence of Helicobacter Pylori in Gastric Fluid in the Surgical Patient." H. pylon associated peptic ulcer disease afflicts ten percent of the U.S. population. In his study, Captain Terrence collected gastric fluid from asymptomatic patients about to undergo general anesthesia. Results indicated that culturing gastric fluid is a simple, yet specific method to establish the presence of H. pylori, and that nasogastric aspirates and tubes should be considered as potentially infectious.

FACULTY

Composition. The Graduate School of Nursing has a total of 15 full time faculty; eight civilians and seven uniformed officers. There are some 142 adjunct faculty; 98 civilians and 44 uniformed officers who assist in the programs of the GSN.

Selected Profiles of Graduate School of Nursing Faculty.

Uniformed Faculty Award. Lieutenant Colonel Judy Ikirt, NC, U.S. Air Force, was selected by the GSN students *to* receive the Uniformed Faculty Award at the May 1998 Graduation. The GSN students chose Lieutenant Colonel Ikirt as the uniformed faculty educator who exemplified the highest qualities of a graduate nursing educator by personal example and performance.

Civilian Faculty Award. Diane Seibert, M.S., was selected by the GSN students to receive the Civilian Faculty Award at their May 1998 Graduation. The GSN students selected Ms. Seibert as the

individual who displayed the highest qualities of a graduate nursing educator by personal example and performance.

RESEARCH/CONSULTATIVE EFFORTS

Prenatal Care: A Study of CONUS and OCONUS Military Women. Inadequate prenatal care many times results in significant economic and readiness burdens for the military health program. Early and comprehensive prenatal healthcare has been supported in numerous studies as the most effective intervention in the prevention of infant mortality, low birth weight, and problematic development. Four USU GSN faculty members, in collaboration with an adjunct faculty member at Travis Air Force Base, have developed a study to: 1) determine the needs availability, accessibility, use, and satisfaction with prenatal care services received by active duty and beneficiary military women within the United States (CONUS) and outside of the United States (OCONUS); 2) determine the birth outcomes of CONUS and OCONUS military women; 3) determine if military women's reported needs, availability, accessibility, use and satisfaction with prenatal care services and birth outcomes are significantly different for CONUS versus OCONUS military women; and, 4) determine military health care providers' perceptions of needs, availability, accessibility, use and satisfaction with prenatal care at CONUS and OCONUS sites. This study will employ methodologies to include a comparative descriptive design to examine and describe group differences in variables. The investigators will survey the following group s: 1) active duty and beneficiary Navy and Air Force women who received prenatal care and gave birth

s: 1) active duty and beneficiary Navy and Air Force women who received prenatal care and gave birth while assigned to military sites in the Pacific Rim and the United States; and, 2) the health care providers responsible for providing the cited prenatal care at each site. Comparisons between the two groups of mothers for each of the prenatal care variables, to include a subset of the health care providers, will be documented, analyzed, and reported.

IV. GRADUATE EDUCATION PROGRAMS

BACKGROUND

Predoctoral Graduate Programs are Essential for Accreditation. The Liaison Committee on Medical Education (LCME) accreditation process is designed to certify that a medical program meets prescribed standards. It is recognized by both the LCME and the USU Board of Regents that predoctoral graduate programs in the basic medical sciences leading to the Doctor of Philosophy Degree or to appropriate degrees at the Master's level are essential components of a School of Medicine dedicated to excellence in medical education. At USU, graduate programs are offered in the following disciplines: Anatomy and Cell Biology; Biochemistry; Clinical Psychology (military students only); Medical Psychology; Microbiology and Immunology; Molecular and Cell Biology; Neuroscience; Pathology (Comparative Pathology and Molecular Pathobiology); Pharmacology; Physiology; Medical Zoology; and, Public Health. Master's Degrees are offered in Public Health; Tropical Medicine and Hygiene; and, Military Medical History (military students only).

Graduate Programs Benefit the Military Health System. Graduate programs in the basic medical sciences benefit the USU and the Military Medical System (MHS) as follows: 1) the graduate programs provide training opportunities for qualified active duty personnel of the Uniformed Services who receive authorization to participate in the USU graduate training programs under the sponsorship of their parent service; 2) graduate students have the opportunity to become aware of the outstanding investigative programs that are ongoing in the Department of Defense laboratories in the Washington, D.C. area; it is anticipated that the research institutes within the Department of Defense will be able to recruit well qualified graduates on the basis of the mutual knowledge and respect developed during the graduate students' interaction at USU; 3) the academic environment of the School of Medicine is maintained at a high level exposing the uniformed physicians-in-training to the disciplined methods of critical scientific inquiry that are the rational basis of problem solving in medical science; and, 4) graduate students participate as teaching assistants and assist in the performance of instructional and investigative efforts that are essential to the mission of the School of Medicine and significant to the MHS.

The Development of Independent Scholarship. The goal of graduate study in the basic medical sciences at USU is to develop independent scholarship, originality, and competence in research, in teaching, and in professional service to the Nation. The graduate education programs are designed for outstanding students with a strong commitment to permanent careers in the basic medical sciences and potentially, in the federal government. Within each Ph.D. program, an individualized course of study is designed for each student to meet his or her specific needs (over 200 individual courses have been established by the participating faculty of USU). The graduate programs are open to qualified civilian and uniformed personnel. Students accepted for graduate study are enrolled on a full-time basis. They assist in the performance of the instructional and investigative efforts that are carried out at the University. Active duty military and uniformed services personnel must obtain the approval and sponsorship of their parent Service; they also incur an obligation for additional service, in accordance with the regulations of the parent Service which govern sponsored graduate education. Most of these officers will complete careers in their parent Services and use their graduate education and training to fulfill specific assignments for their Surgeons General and the MHS.

Research Facilities. The graduate education programs are conducted in facilities on the campus of USU. Well-equipped, modem laboratories are available to support the wide variety of research projects directed by the faculty in the basic medical sciences. Special resources include high resolution transmission and scanning electron microscopes, video-based computer graphics and confocal microscopy, a central resource facility providing custom synthesis of oligonucleotides and peptides, biohazard containment laboratories, a centralized animal resources facility, a medical library, computer support to include orientation to web sites and the Internet, and a learning resources center.

Selection of Students. A formal application is required of all persons seeking admission to graduate study at USU. Applications and all supporting documentation must be received no later than February 15 (the deadline for Clinical Psychology is January 15) for programs beginning in the following August. Applicants must have completed a baccalaureate degree program from an accredited academic institution before matriculation at USU. All graduate students participate on a full-time basis and assist in the teaching and research programs that are integral components of the graduate education programs in which they are enrolled.

Responsiveness to the Needs of the Services. A specific example of the USU Graduate Education Program's direct response to the needs of the Surgeons General is the creation of a new program for the Master's in Military Medical History. This program is an outgrowth of the Fellowship in Military Medical History established at USU in 1983 to train instructors of history for the United States Army Academy of the Health Sciences. A request was received from the Medical Service Corps of the Army to establish a degree granting program so that officers could continue to be used for lessons learned and history education assignments as teachers at the Army Academy. The program of study is currently limited to officers in the Medical Service Corps of the Army; two degrees have been granted, one in 1997 and one in 1998.

ACCREDITATION

Accreditation of USU Graduate Programs in Public Health Extended through December 31, 2003. The Council on Education for Public Health (CEPH) is the recognized accrediting body for graduate schools of public health and graduate programs in community health education and community health/preventive medicine. Following a site-visit during 1998, the CEPH Board of Directors determined on October 3, 1998, to continue the accreditation of the USU Graduate Programs in Public Health through December 31, 2003.

In addition to extensive medical school teaching, the Department of Preventive Medicine and Biometrics (PMB) offers courses of study leading to the Master of Public Health (MPH), Master of Tropical Medicine and Hygiene (MTM&H), Master of Science in Public Health (MSPH), Doctor of Public Health (DrPH), and Doctor of Philosophy in Medical Zoology (PhD) Degrees, all of which were reviewed for accreditation. Given the mission of USU and the importance of prevention to military medicine, PMB is a large and vital part of the medical school and the University. The program was initially accredited by CEPH in 1985, followed by a review in 1991 at which time accreditation was extended for a seven-

year term. The current review included a self-study process carried out by program constituents, the preparation of a self-study document, and an on-site visit in mid-June of 1998 by a team of external evaluators. The site visit team interviewed USU officials, department administrators, program staff, faculty, students, alumni, and community representatives. The CEPH found that ..." the public health programs constitute the largest graduate program and have both visibility and appropriate decision-making prerogatives. The environment is a multi-disciplinary setting which values and supports interactions both within the department and externally to a wide variety of rich intellectual resources within the institution and with federal partners throughout the Washington, D.C. area. The values of the institution and the philosophy of military medicine are an exceptionally 'good fit' with the values and philosophy that underlie public health and preventive medicine. The program has strong ties to the military community, both locally and worldwide, and the instructional programs have particular relevance to the needs of the uniformed services to which program graduates will return after their training. The curriculum is quantitatively-oriented and rigorous. There is a well qualified faculty (some 50 fulltime, assigned faculty members), augmented by an extensive and impressive list of adjunct faculty (currently totalling 170). Resources are generally excellent, although growth of the program is constrained because of limited space."

Clinical Psychology Program Receives Accreditation. The Department of Medical and Clinical Psychology's clinical psychology Ph.D. Program received full accreditation from the American Psychology Association's Committee on Accreditation. The program received its accreditation in record time and will be listed annually among accredited programs of professional psychology in the American Psychologist. The site visit report stressed that "the curriculum is clearly articulated and appropriately sequenced, and the practicums are organized. Well-qualified and accessible, the faculty provides excellent role models for students. Also commendable is the program's commitment to systematic self-evaluation." The program is designed for students with a background in psychology who wish to pursue clinical practice in military settings.

STUDENT AFFAIRS

19th Commencement - May 16, 1998.

Well over 2,000 family members and guests attended the 19th Commencement Ceremony at Constitution Hall in Washington, D.C., on May 16, 1998. The School of Medicine's Graduate Education Programs awarded ten Doctor of Philosophy Degrees, five Master of Science Degrees, twenty-nine Master of Public Health Degrees and, one Master of Military Medical History Degree. In total, the Graduate Education Programs have now granted 177 Doctor of Philosophy Degrees, 46 Master of Science Degrees, 277 Master of Public Health Degrees, 21 Master of Tropical Medicine and Hygiene Degrees, and two Master of Military Medical History Degrees.

The 1998 Graduate Student Award. The Graduate Student Award was presented to **Lieutenant Colonel Dale Haak**, U.S. Army. This award was presented during the 1998 USU Graduation Ceremonies to recognize this graduating student for his outstanding and exceptional service rendered to the student body of the F. Edward Hebert School of Medicine and USU. During the graduation ceremonies, LTC Haak received a Doctor of Philosophy for his work in the Department of Biochemistry. This award

recognizes LTC Haak's academic achievement, participation in the academic and intellectual life of the community, and contributions to the welfare and morale of other graduate and medical students.

Honorary Degrees. Honorary Degrees were presented during the 1998 Commencement Ceremonies. General Charles C. Krulak, USMC, Commandant of the Marine Corps, was presented the Doctor of Military Science (honoris causa) Degree in recognition of his extraordinary support of military medicine and USU.

Three other individuals also received honorary degrees. **Retired Air Force Brigadier General Vorley M. Rexroad** was recognized as a leading advocate for both the creation of the University and for military medicine in general; Rexroad provided his many years of support for military medicine and USU during his distinguished military career, as a former senior member of the Senate staff, and as a retired member of the Armed Forces. Rexroad was presented the Doctor of Medical Humanities (honoris causa) Degree.

Nobel Prize winner Joshua Lederberg, Ph.D., received the Doctor of Military Medicine (honoris causa) Degree. **Dr.** Lederberg presented the David Packard Lecture in 1986 and was a guest speaker at the 1997 Military Medicine Conference. He has been a long time supporter of both USU and of Military Medicine.

Noted Surgeon David Sabiston Jr., M.D., was USU's 1983 Commencement Speaker. Dr. Sabiston has been associated with the USU Department of Surgery in numerous capacities since 1977, and his textbook, Surgery/Essentials of Surgery, as been the standard textbook for third-year medical students since 1976. Dr. Sabiston was presented the Doctor of Military Medicine and Surgery (honoris causa) Degree.

Class of 2002. During July, 1998, 27 students began the Master of Public Health Graduate Education Program; in August, 19 students started their doctoral work. It is noted that over 200 applicants sought admission to the USU Graduate Education Programs.

ALUMNI AFFAIRS.

Selected Profiles of Graduates from the Graduate Education Programs.

Classes of 1988 Through 1993

Class of 1988.

Patricia Bertsche, a graduate of the Master of Public Health Program, is the Manager of the Ergonomics Institute at Ohio State University in Columbus, Ohio.

Pamela Puttfarchen, a Ph.D. graduate in Pharmacology, is a Research Pharmacologist for Abbott Laboratories in Abbott, Park, Illinois.

Steven Wietstock earned his Ph.D. in Pharmacology and is currently the Coordinator for Instructional Programs in the Department of Biochemistry at Indiana University in Bloomington.

Class of 1989.

Lieutenant Commander Joseph Chen, USPHS, a recipient of the USU Master of Public Health Degree, was transferred from the Indian Health Service Southern Bands Health Center in Elko, Nevada, to a similar position in San Pedro, California.

Colonel Glenn Mitchell, U.S. Army, who received the Masters of Public Health Degree, is a student at the Army War College in Carlisle, Pennsylvania.

Rear Admiral Phillip Smith, USPHS, graduate of the USU Master of Public Health Program, was temporarily assigned to the Indian Health Service in Bemidji, Minnesota.

Class of 1990.

Paul Ling, who earned a Doctor of Philosophy Degree in Microbiology, is an Assistant Professor in the Department of Molecular Virology at the Baylor College of Medicine in Houston, Texas.

Class of 1993.

Commander John Neale, USPHS, is the Chief Dental Officer at the Unitah and Ouray Indian Health Center, Fort Duchesne, Utah. He is a graduate of the USU Master of Public Health Program.

FACULTY

1998 F. Edward Hébert School of Medicine Biomedical Graduate Educator Award. As part of the 1998 USU Graduation Ceremonies, Joseph T. McCabe, Ph.D., Assistant Professor, Department of Anatomy, received the Biomedical Graduate Educator Award. The award recognizes the outstanding contributions of Dr. McCabe, a member of the USU biomedical graduate faculty in the School of Medicine. Dr. McCabe was selected to receive this award because of his demonstrated commitment to graduate education through his extensive and outstanding contributions to the education of students in the graduate doctoral training programs at USU. The award recognizes excellence in teaching, mentoring of graduate students, administering graduate programs, and promoting the interests of graduate education.

V. GRADUATE MEDICAL EDUCATION

ESTABLISHMENT AND MISSION

Background. The School of Medicine Office of Graduate Medical Education (GME) was established in 1986 in order to provide consultation on GME programs (internship, residency, and fellowship training for physicians) for program directors and the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). From 1986 through July of 1998, USU GME provided DoDwide consultation and oversight for numerous USU-SOM sponsored or cosponsored GME programs. The USU Office of GME is currently involved as the Administrative Office for the National Capital Military Medical Education Consortium which generates additional GME-related taskings from OASD/HA.

Mission. The following responsibilities are currently assigned to the USU GME program: 1) continue to be the academic affiliate for many GME programs especially in the development of qualified uniformed GME physician faculty for the Services; 2) expand consultative services to ensure that accreditation is not jeopardized when DoD GME programs are integrated; 3) continue to participate in the OASD/HA implementation of its overall plan to select qualified program directors, to provide consultative support in the ongoing selection and evaluation of GME program faculty, and to support the development and implementation of an intra-DoD resident matching system; 4) coordinate with the implementation of a plan to collect and evaluate data and information on DoD GME programs in order to ensure academic and scientific excellence; 5) continue significant and critical support to military GME programs in the National Capital Region (NCR) through faculty supervision of trainees, support for the Residency Review Committee (RRC), mandated research, cumculum enhancement, faculty development, and direct patient care; 6) advise on military unique GME curricula; and, 7) serve as the Administrative Office for the Consortium.

NATIONAL CAPITAL MILITARY MEDICAL EDUCATION CONSORTIUM

Administrative Office for the National Capital Military Medical Education Consortium. In September of 1997, USU GME was selected as the Administrative Office for the National Capital Military Medical Education Consortium; this delegation of responsibility was placed under the leadership of the USU Associate Dean for Graduate Medical Education.

Background. In 1993, the Assistant Secretary of Defense for Health Affairs directed the integration of duplicate GME programs in the National Capital Region (NCR). In accordance with that directive, the National Capital Military Medical Education Consortium was established by the Commanding Officers of the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Dean, USU School of Medicine on January 25, 1995. The initial mission directed by OSD was the integration of 28 residencies and 16 fellowship programs in the NCR. Primary care specialties were exempt. Five programs were initially identified for integration: Pediatrics; Pathology; Otolaryngology/Head and Neck Surgery; Obstetrics and Gynecology; and, Psychiatry. The process of the selection of program directors for the integrated residencies and

arrangements for site surveys began immediately; and, by the end of 1995, four programs had been site surveyed and one program, Pathology, had been approved without a site survey. During 1996, the pace of integration slowed somewhat, but still progressed toward the integration of all duplicative programs with the possible exception of several specialties which had identified specific impediments to integration. Non-duplicative Fellowship Programs joined the Consortium as their parent programs were integrated. On June 20, 1997, the first joint graduation exercise for the National Capital Region was held at the Walter Reed Army Medical Center with more than 350 graduates participating. By July of 1997, there were 15 programs under Consortium sponsorship as well as seven integrated programs under the sponsorship of one of the TriServices. An institutional site survey of the National Capital Consortium by the Accreditation Council for Graduate Medical Education was completed in July of 1997, and resulted in a favorable decision. There were 24 programs under the Consortium sponsorship at the end of 1997. As of July 1, 1998, all of the USU GME programs were under the sponsorship of the Consortium. The Consortium hopes to have all 63 GME programs under its sponsorship by the Year 2002.

USU SPONSORED FELLOWSHIP PROGRAMS

USU School of Medicine Primary Care Sports Medicine Fellowship Program. The Department of Family Medicine, in conjunction with the family practice residency programs at DeWitt Army Community Hospital, Fort Belvoir, Virginia, and Malcolm Grow United States Air Force Medical Center, Andrews Air Force Base, Maryland, continued to sponsor a Primary Care Sports Medicine Fellowship Program during Fiscal Year 1998. The goal of the program is to train primary care specialists in the unique aspects of sports medicine. The fellowship is available to Army, Navy, and Air Force physicians who have successfully completed a residency in family practice. The program accepts two to three fellows per year, selected on a competitive basis, and is offered to those who are board-certified in Family Medicine, Pediatrics, Internal Medicine, or Emergency Medicine.

The Fellowship Develops Clinical Competencies Needed to Diagnose and Manage Medical Illness and Injuries Related to Sports and Exercise. Sports Medicine is the application of the physician's knowledge, skills and attitudes toward people engaged in sports and exercise. The Fellowship develops clinical competencies needed to diagnose and manage medical illness and injuries related to sports and exercise. Clinical experience includes injury prevention, pre-participation evaluation, return to play or duty criteria, management of acute and chronic illness or injury, and rehabilitation. The fellows function as team physicians, promoting physical fitness and wellness for active duty members, dependents, and civilians.

The program emphasizes physiology and biomechanics, principles of nutrition, pathophysiology of illness and injury, effects of therapeutics, performance enhancing and recreational drugs, psychological aspects of exercise, performance and competition, ethical principles and legal aspects of exercise and sports, research, and medical writing principles. The fellows are required to publish at least one article or chapter on a sports medicine topic and are asked to design and complete a clinical research project. They develop skills in teaching by preparing and delivering lectures to medical students, residents and staff physicians; and, they must present lectures at local and national level conferences.

USU Fellowship Consists of Five Maior Rotations: an ambulatory sports medicine clinic; team physician responsibilities at the high school, collegiate and operational levels; faculty development and didactics; operative orthopedic surgery; and, continuity in their primary specialty. At the ambulatory

sports medicine clinic, the fellows acquire the skills and knowledge commensurate with a primary care sports medicine specialist. Specifically, the clinic provides resident exposure to pre-participation examinations, exercise prescriptions, medical programs related to exercise participation and ambulatory orthopedics. The resident is also expected to acquire skills in joint aspiration and injection, orthotic fabrication, video gait analysis, proper utilization of bracing, exercise stress testing and compartment pressure testing. In addition, the fellow functions as a teacher and mentor to medical students and residents.

The team physician responsibilities place each fellow in the role of a primary physician for a high school sports team in the Washington, D.C., metropolitan area. Rotations take place at the Bishop O'Connell High School, the Potomac High School, and the Madison High School. At the collegiate level, fellows participate with George Mason University, Marymount University, American University and with the U.S. Naval Academy. Toward the conclusion of the program, fellows will spend two weeks at the U.S. Olympic Training Center in Colorado Springs, again taking on the role of a team physician. The rotation concludes at the Officer Candidate School Health Clinic at the Quantico Marine Corps Base, Virginia, where the fellows apply their knowledge to a highly challenged and motivated active duty population. The faculty development and didactic program instructs the sports medicine resident in the knowledge base of primary care sports medicine through four hours of lectures each week and participation in USU's faculty development program. Once the fellows complete their program, they will transfer to their new duty stations functioning as clinicians, researchers and teachers.

The fellowship was accredited in September of 1997 by the Accreditation Council for Graduate Medical Education. Lieutenant Colonel Francis O'Connor, MC, USA, and West Point 1981 Graduate, is currently the fellowship director.

Additional Achievements in Graduate Medical Education.

The Department of Pediatrics. The Pediatric Sub-Specialty Fellowship Programs in Endocrinology, Gastroenterology, Hematology-Onocology, Infectious Diseases, and Neonatology received full program accreditation by the Accreditation Council for Graduate Medical Education in 1998. Fellows in these sub-specialties also received several of 1998's most prestigious awards from the pediatric scientific societies. Catherine A. Dinauer, Major, MC, U.S. Army, graduating fellow in Pediatric Endocrinology, was one of only two national recipients of the Fellow's Clinical Research Award presented by the Society for Pediatric Research. Her research into the pathogenesis and clinical outcome of childhood thyroid cancer was judged outstanding by the awards committee. She also received the General Graves B. Erskine Award from the Walter Reed Army Medical Center in recognition of her overall outstanding performance as a graduating fellow. Julia Lynch, Major, MC, U.S. Army, graduating fellow in Pediatric Infectious Disease, received the Bailey K. Ashford Award form the Walter Reed Army Medical Center, and the Ogden Bruton Award from the 1998 Uniformed Services Pediatric Research Competition for her outstanding work researching cross-clade reactivity of T-cells in human immunodeficiency viral infections. She was invited to present this work in Geneva, Switzerland at the 12th International World's AIDS Congress. Major Lynch also received Walter Reed's Mologne Award in recognition of her outstanding reputation as a physician role model.

SIMULATED TRAINING FOR USU GRADUATE MEDICAL EDUCATION

Simulated Patients Provide Unique Training for Military Relevant and Combat Trauma Scenarios. The advanced training provided by the USU patient simulator is described in this report in Part II, the Curriculum section, the School of Medicine. When the anesthesiology residents come from the National Capital Area Anesthesiology Program and the Portsmouth Naval Medical Center, the training is intense. The scenarios are designed to present specific patients who provide complex clinical problems. Residents are purposely pushed beyond their competency levels, until they begin to make mistakes; those lessons will be remembered. Thus, critical lessons are learned without putting human patients or the residents at risk.

Simulated Operating Room. The simulation laboratory is fully equipped with all of the functional equipment of an operating room, including the standard monitoring equipment, the life support system (anesthesia machine and ventilator), a defibrillator, and instruments used in treatment. The laboratory also includes complete audio/video recording and playback equipment. Training sessions are recorded, and the residents review their performance with the instructors.

The simulated patient provides a unique opportunity to experience relatively rare cases, military relevant, and combat trauma scenarios. The residents gain experience in recognizing problems, developing decision making skills, familiarizing themselves with instruments and equipment, and refining techniques and procedures. Residents are able to repeat the scenarios until they are performed correctly.



VI. THE OFFICE OF CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

"I would like to take this opportunity to commend the staff at the USUHS for the superb education conferences they designed and conducted for the Office of Medical Services of the Department of State this past March and April.

The Office of Medical Services utilizes a multidisciplinary approach for health care delivery to our beneficiaries around the world. The staff of USUHS embraced the challenge of providing one conference for all our primary care providers and produced a program that was high level, professional, and right on target for the educational needs of our medical professionals. Following each session, the participants were asked to rate the individual speakers and the content of the presentations. The evaluations were universally positive for the quality of the speakers and for program content and scope. This was the highest approval rating of any Continuing Medical Education Conference to date.

Your Medical School, the Uniformed Services University of the Health Sciences, should be commended for providing the Department of State a superb continuing medical education course. Everyone connected with this effort should be congratulated for the relevance of the content, the high quality of the presentations and for their dedication to the project.

The success of this effort is a shining example of the benefits of interagency cooperation."

A letter to The Honorable Rudy DeLeon, Undersecretary of Defense for Personnel and Readiness, from Bonnie R. Cohen, Undersecretary of State for Management, dated July 28, 1998.

NATIONALLY RECOGNIZED CONTINUING EDUCATION CREDIT

Mission. Under Title 10, U.S. Code (Section 21 13), USU is mandated by Congress to "establish programs in continuing medical education for military members of the health professions to the end that high standards of health care may be maintained within the military medical services."

Continuing medical education (CME) has always been recognized as an essential component of the continuum of medical education. The critical role of CME in the educational spectrum has come to the fore during more recent years as a result of several educational, social, and political factors:

rapid advances in biomedical knowledge and its application to the practice of medicine; changing expectations of physicians as effective communicators and team members; enhanced awareness of the role of physicians in disease prevention;

incorporation of evidence-based medicine, accountability and financial incentives into daily medical practice;

changes in the work environment of physicians with the move of medical practice to the ambulatory setting; and,

use of CME evidence of maintenance of competence for medical practice in medical relicensure, hospital privileging, specialty recertification, professional society membership and selected other requirements.

Unique Accreditation Within the Military Health System. The USU Office of Continuing Education for Health Professionals (CHE) provides nationally recognized continuing education credit for physicians, nurses, psychologists and healthcare executives, and social workers through its accreditation by the Accreditation Council for Continuing Medical Education, the American Nurses Credentialing Center's Commission on Accreditation, the American Psychological Association, and the American College of Healthcare Executives. This inclusive provision of continuing education from one office is believed to be unique within the Military Health System (MHS).

CHE is uniquely positioned to perform a significant role in facilitating the continued professional growth of health care professionals in the MHS. The principal responsibilities of the office are the identification of educational needs, planning, implementation, and the evaluation of continuing education and resuscitative medicine programs for members of the health professions. CHE is also responsible for the acquisition and maintenance of the University's continuing education accreditation and of trauma and resuscitative medicine training program affiliations. The USU Office of CHE is unique in the MHS in that it is able to provide continuing education under the academic umbrella of USU. In recognition of the outstanding accomplishments and significance of both the Office of Continuing Education for Health Professionals (CHE) and its leadership, during 1998, the USU President directed that the **Director of CHE**, **Captain Laura Omer**, **Nurse Corps**, **U.S. Navy**, **would be redesignated as the Senior Executive Director of CHE**.

INCREASED SUPPORT FOR THE MILITARY HEALTH SYSTEM

CHE Support for Graduate Medical Education Programs. In conjunction with the National Capital Consortium, CHE's involvement has greatly increased through sponsoring on-going continuing medical education (CME) programs such as Grand Rounds in Cardiothoracic Surgery, Faculty Development, Family Medicine, Preventive Medicine, Ophthalmology, Pediatrics, and Psychiatry.

CHE Support for TRICARE/Health Affairs Initiatives. During Fiscal Year 1998, the USU Office of CHE supported the Office of the Secretary of Defense (OSD), Health Affairs (HA) with its increased demand for continuing education activities. OSD/HA-initiated conferences conducted by CHE during 1998 included the TRICARE Winter Conference, the TRICARE Breast Cancer Care Conference, two TRICARE Financial Management Programs, and the TRICARE Europe Conference Fiscal Year 1998. Other initiatives supported by USU were the Health Information and Management Systems Society Conference, five Medical Executive Training Courses, the Video Teleconference on Managed Care, the Military Training Network Conference, and 19 courses on the Medical Effects of Ionizing Radiation.

Specialty and Review Courses. The Office of CHE sponsored continuing education for numerous specialty and review courses for the MHS during 1998. Some of the courses sponsored by CHE were: the Uroradiology Review Course; the WRAMC Ophthalmology Course; the Center for Excellence in Cardiovascular Medicine (Hypertension Treatment in the New Millennium); International Spine Workshops (Cervical, Minimally Invasive Endoscopy, Peripheral Nerve, and Thoraco-Lumbar); the Capital Conference Family Practice Review; the Army Force Health Protection Conference; Hot Topics in Magnetic Resonance Imaging (MRI); and, surgical topics (Lasers in Surgery, Advanced Gynecological Laparoscopy, Advanced Laparoscopic, Basic Microvascular Surgery, Video-Assisted Thoracic Surgery, Pediatric Surgery Day, 13th Surgery for Trauma Day, and, Utrasound for the General Surgeon).

A pilot project, Military Medical Humanitarian Assistance Course, was initiated by the Department of Pediatrics to create an educational experience to prepare military pediatricians for participation in military medical humanitarian operations. The Department of Military and Emergency Medicine had four articles, "Diabetes Mellitus," "Hypothermia," "CO Poisoning," and "Meningitis," which were designated for CME credit by the USU and were published in The Epic, a publication that reaches military members of the American College of Emergency Physicians.

For the third year, CHE sponsored the U.S. Air Force Reserve Flight Surgeon's Sustainment Course, directed by the USU Department of Family Medicine. A primary care continuing education conference was conducted in the Western Pacific at the U.S. Naval Hospitals Guam and Yokosuka and at the U.S. Air Force Hospital Yokota. About 250 health care workers received CE credit during the conferences at substantiated cost avoidance to the sponsoring commands.

Association of Military Surgeons of the United States (AMSUS) Annual Meeting. Since the 99th Annual Meeting in 1992, CHE has worked with AMSUS to provide continuing education credit for their Annual Meetings. AMSUS was established in 1891, and incorporated by an Act of Congress in 1903, as the Society of the Federal Health Agencies. As such, it contributes to the improvement of all phases of the federal health services. The constituent services of AMSUS include the medical departments of the U.S. Army, U.S. Navy, U.S. Air Force, U.S. Public Health Service, and the Department of Veterans Affairs. The Office of the Army Surgeon General hosted the 104th Annual Meeting, Chemical, Biological and Radiation Threats: A Challenge for Federal Medicine, held from November 16-20, 1997, in Nashville, Tennessee. The agenda emphasized the special requirements imposed by such threats on federal medicine and took full advantage of the unique forum offered by the meeting and attendees. For Fiscal Year 1998, the USU Office of CHE offered 253 sessions for continuing education credit, a substantial increase from the 47 offered during Fiscal Year 1993.

GENERATED COST AVOIDANCE FOR DOD BY CHE

CHE Generates Cost Avoidance for DoD. In carrying out its principal responsibilities during Fiscal Year 1998, CHE sponsored continuing medical education for 208 programs with an attendance of 3,872 physicians; provided continuing nursing education for 56 activities with an attendance of 2,904 nurses; and, approved Category II (non-ACHE) continuing education credit for 14 programs for 1,128 members of the American College of Healthcare Executives. Because the USU Office of CHE brings medical training to the medical health care professionals, an estimated cost avoidance of \$2,621,125 was

generated for the DoD by eliminating extensive travel expenses and time away from the hospitals and clinics (the total cost avoidance was calculated by subtracting all of the operating costs for the USU Office of CHE, to include civilian and military manpower, from the total of savings generated by the elimination of travel, per diem and significant commercial registration expenses (\$3,266,528 - \$645,403 = \$2,621,125).

SUPPORT FOR OTHER FEDERAL ORGANIZATIONS

Department of State Conferences. In Fiscal Year 1998, two conferences were held for the Department of State Foreign Service Medical Officers: one at USU and one in Hawaii. The great success of these conferences is attributed to specific needs assessment surveys and USU's academic flexibility in obtaining the best faculty from each geographic location to address the specific learning needs of these health care practitioners. USU was asked to prepare conferences for this group again in Fiscal Year 1999.

NASA Teleconference Continuing Education Series. Another service to other federal agencies was the teleconference continuing education series conducted by NASA using expertise provided by the staff of USU's Department of Preventive Medicine and Biometrics. The objective of the series was to discuss health care systems operating in the seven countries providing members for the team manning the space station. The series was considered a great success and future programs with NASA are being discussed.

Collaboration with the Food and Drug Administration. The USU Office of CHE collaborated with the Food and Drug Administration to provide continuing education credit for U.S. physicians and nurses through the publication, MEDWATCH, related to their responsibilities to report incidences in medical devices.

The Future. In order to expand the University's ability to serve as a resource for other federal agencies, the Office of Continuing Education for Health Professionals is seeking partnerships with Service doctrine centers, the National Institutes of Health, the National Aeronautical and Space Administration, the Public Health Service, the National Institute for Drug Abuse, the Federal Emergency Management Agency, the Department of State, and similar entities. Partnerships are being considered to provide continuing education credit for pharmacists, dieticians, radiology technicians, laboratory technicians, dentists, nurse practitioners, and nurse anesthetists.

MILITARY TRAINING NETWORK

Mission. The mission of the Military Training Network (MTN) is to develop and implement policy guidance and ensure compliance with curriculum and administrative standards for resuscitative and trauma medicine training programs for the Uniformed Services and Department of Defense affiliates. The USU TriService MTN staff provides specific service expertise, central record keeping, world-wide coordination of programs and ensures that national resuscitative and trauma medicine organizations are aware of the unique requirements of military medicine.

World-Wide Capabilities Essential to Medical Readiness. Currently, the USU MTN is the only American Heart Association Affiliate with world-wide reciprocity for health care providers. Since July of 1997, the USU MTN has been the only American Heart Association Affiliate with a continued discount for course materials. The USU MTN provision of this training enhances DoD's ability to provide training in strategically critical areas throughout the world (e.g., Bosnia, Mt. Sinai, and Turkey), and on operational platforms (e.g., aboard aircraft carriers) ... remote sites where civilian training would not be available. All of these capabilities are essential to the wartime medical readiness of the Uniformed Services.

MTN Generates Estimated Savings for DoD. Department of Defense sites affiliated with the MTN are approved to conduct self-sustained resuscitative and trauma medicine training. This continues to prove cost-effective to the Military Health System because it eliminates the need to pay premium training cost for civilian resuscitative and trauma medicine programs. For example, during Fiscal Year 1998,212,515 defense personnel were trained through the USU MTN. The average commercial cost for providing that training would have conservatively totalled at least \$10,486,950. The 1998 cost avoidance generated for the DoD, an estimated total of \$9,959,082, was calculated by subtracting all of the operating costs, to include civilian and military manpower, provided by the three Services from the average commercial cost (\$10,486,950 - \$527,868 = \$9,959,082).

VII. THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

ESTABLISHMENT

Background. The Armed Forces Radiobiology Research Institute (AFRRI) is the principal Department of Defense (DoD) laboratory for investigations of the biological effects of ionizing radiation. The TriService Laboratory, located on the campus of the National Naval Medical Center (NNMC) in Bethesda, Maryland, was chartered in 1961. In October of 1993, the management of AFRRI was transferred from the Defense Nuclear Agency (now the Special Weapons Directorate in the Defense Threat Reduction Agency) to USU. AFRRI employs about 170 military and civilian scientists, physicians, technicians, and support personnel. The Institute supports the research requirements of DoD components and collaborates with other government facilities, academic institutions, and civilian laboratories in the United States and other countries.

Unique Radiobiology Research. The AFRRI complex was designed and built to conduct radiobiology research in support of the military medical mission. The first radiation source installed in the facility was a TRIGA research nuclear reactor. The design for this reactor was conceived by Dr. Edward Teller as one that would be safe if built and managed by university nuclear engineering departments for nuclear materials research and training purposes. It was quickly recognized that AFRRI's ability to safely operate the TRIGA made it an ideal source to simulate the prompt radiation pulse from a nuclear weapon.

More recently the reactor demonstrated its utility as a source of fission spectrum neutrons to conduct radiobiology experiments at very low-dose levels for protracted periods of time. Although there are 49 of these small research reactors in the world and 18 in the United States, **only the AFRRI reactor** is designed for and is wholly dedicated to radiobiology research.

AFRRI's second major source is a cobalt-60 irradiation facility. Designed to safely hold up to 400,000 curies of cobalt-60, **the facility is the largest source of gamma rays on the East Coast.** Because this source can produce a high exposure rate consisting of monoenergetic gamma-ray fields, it is ideally suited as a reference source of high-energy photons for military radiobiology research.

OUTREACH

Sharing of Research Findings. AFRRI disseminates its findings within DoD and the international scientific community through articles in peer-reviewed journals, presentations at professional conferences, and reports and recommendations to the TriServices concerning the mitigation of radiation hazards and optimized medical treatment of casualties. Research is shared with specific audiences through symposia, consensus conferences, publications, and an accredited course on the medical effects of ionizing radiation.

The Medical Effects of Ionizing Radiation Course. The Medical Effects of Ionizing Radiation Course trains physicians, nurses, and technical support personnel on treatment strategies for radiation

injuries. Two-day versions of the course are offered worldwide at military medical centers throughout the year. An intense four-day course is also offered once a year in the Washington, D.C., area.

Medical Radiobiology Advisory Team. AFRRI also maintains the Medical Radiobiology Advisory Team, which provides medical and health physics consultation and dose assessment for any military or non-military nuclear or radiological accident, incident, or injury. This team has been used to provide support in actual radiological emergencies that have occurred around the world. With additional AFRRI health physicists, the team also deploys with the Defense Nuclear Advisory Team in response to worldwide exercises involving nuclear weapons and nuclear reactor accidents, and exercises involving radiological dispersal devices.

Research Thrusts. There are four major AFRRI research thrusts that are carried out by the following teams:

The Radiation Casualty Management Team. This team investigates the full spectrum of medical countermeasures for an external exposure to ionizing radiation. Most recently, this team developed sophisticated strategies based on the therapeutic stimulation of growth and repair of irradiated blood cell populations. This effort significantly increased survivable levels and formed the basis for a consensus in the treatment of radiation injury for persons exposed to life-threatening levels of radiation. The team is also testing pharmaceutical strategies to lower the long-term health risks of radiation exposure. Recent experiments performed at AFRRI, as well as other laboratories, have used animal models and cellular systems to demonstrate the ability of certain drugs to block the induction of radiation-induced mutations and related neoplastic processes. The team is evaluating non-invasive drug delivery systems that will permit the continuous infusion of radioprotective agents to block the effects of radiation exposure for prolonged periods of time, without causing unacceptable side effects.

The Biodosimetry Team. This team is developing biodosimetric assays to assess ionizing radiation exposure levels. Work is progressing to establish at AFRRI the capability to conduct definitive diagnostic biodosimetric assays based on an automated analysis of the number and distribution of chromosome aberrations in lymphocytes. In addition, cytogenetic and molecular biomarkers are being evaluated for use in developing rapid field-deployable biodosimetric assays to support commanders' decisions regarding tactical operations and medical treatment. The screening assay capability in the field will be supported by the definitive assay capability at AFRRI.

The Depleted Uranium Team. This team was formed soon after it was determined that depleted uranium (DU) munitions used during the Gulf War had wounded approximately 16 American soldiers as a result of friendly-fire accidents. Although this is a small number of casualties, the demonstrated tactical superiority of this new class of munitions means that future adversaries could deploy them against our forces on a large scale. As with conventional shrapnel injuries, it is often impossible to surgically remove all of the metal fragments from affected tissues; personnel wounded with DU are likely to carry the metal for the rest of their lives. Although DU has a low specific radioactivity, the relatively small amount of radiation emitted from the fragments may contribute to, and perhaps enhance, the toxicity associated with the chemical properties of uranium. Little is known about the immediate and long-term health effects of uranium fragments imbedded in tissues. Although agents are available to help remove uranium from the

body, these agents are highly toxic and cannot be tolerated when administered over long periods. A better understanding of the medical consequences of these types of injuries and new, long-term treatment strategies are being sought by this team.

The Nuclear. Biological. and Chemical Interactions and Countermeasures Team. Because doses of radiation that are well below the lethal range for humans can significantly compromise the body's host defense systems, the Nuclear, Biological, and Chemical Interactions Team was established to examine those interactions when sublethal doses of radiation are combined with sublethal doses of biological and/or chemical warfare agents. Another objective of this team is to determine interactions between sublethal doses of radiation and the theater-specific immunizations or chemical agent prophylactics given to military personnel before or after deployment. There may be special health problems if their altered immune systems are challenged with sublethal doses of radiation soon after they have been given otherwise appropriate prophylactic agents. A third objective is to determine the radiation sensitivity of biological and chemical agents that current forces may encounter. These data will form the technical basis for a strategy to neutralize such agents wherever they are found.

Four Projects Reflect Defense Technology Objective Status. In Fiscal Year 1998, AFRRI captured a fourth Defense Technology Objective (DTO) covering a portion of its program related to nuclear, biological, and chemical combined effects. (A "DTO" is a specifically recognized high priority element of technology advancement that will be developed or demonstrated and has an anticipated delivery date.) In Fiscal Year 1997, for the first time, significant parts of the AFRRI radiation casualty management, biological dosimetry, and depleted uranium health effects efforts captured three of the 21 DTOs under the biomedical focus area of the Defense Technology Area Plan (DTAP). The DTAP is one component of the Defense Science and Technology Strategy; it presents the DoD objectives for the investment strategies in applied research and advanced technology development needed to advance technologies that are 'critical to DoD acquisition plans, service warfighter capabilities, and the Joint Warfighter Science and Technology Plan. The product of a DTO is expected not only to enhance military operational capability but also to address other important issues such as affordability and dual-use application, both of which receive special emphasis in the Defense Science and Technology Strategy; DTO status identifies funding required by DoD to achieve a new capability... three AFRRI project areas secured this budgetary recognition during Fiscal Year 1997, and a fourth in Fiscal Year 1998.

Future Missions. The world remains a dangerous place when it comes to nuclear and other radiological weapons. AFRRI addresses those risks by developing biomedical strategies to prevent, assess, and treat radiation injuries. Although the end of the Cold War and the ensuing collapse of the Warsaw Pact greatly diminished the threat of a large-scale exchange of nuclear weapons, the development and stockpiling of these weapons continues. Examples are the discovery of a sophisticated nuclear weapons program in Iraq by the International Atomic Energy Agency after the Gulf War and recent nuclear tests by India and Pakistan. Continuing uncertainties concerning the status and security of the nuclear stockpile and the growing ambitions and sophistication of terrorist organizations underscore the need for national and international strategies to deal with these threats. Other issues have emerged in recent years that involve radiation and demand biomedical solutions. They include the possible use of radioactivity to contaminate facilities or terrain with the aim of denying or impeding access to operational forces; the medical questions regarding soldiers who were wounded with depleted uranium munitions in the Gulf

War; the increasing threat of nuclear, radiological, or combined terrorism; and, the increasing role of the Department of Defense in humanitarian operations that could include missions in radiation environments. AFRRI is uniquely equipped to address the biomedical research objectives that could result from these issues.

REALIGNMENT

Committee Determines Realignment. In October **1998**, the Director of the Armed Forces Radiobiology Research Institute (AFRRI) reported to the USU Board of Regents that the committee tasked to review the alignment of AFRRI recommended that AFRRI be aligned with the Defense Threat Reduction Agency.

For further information regarding this document contact the USUHS Office of the Vice President for Administration and Management. Phone: (301) 295-1956; E-Mail: mdix@usuhs.mil



MILITARY MEDICINE & RESEARCH SERIES

Packard Lecture 1998

David Packard Lecture Series

The Packard Lecture Series was named in honor of the late David Packard, distinguished friend and supporter of the Uniformed Services University of the Health Sciences. Mr. Packard was Deputy Secretary of Defense when the university was created in 1972. He served as the first chairman of the Board of Regents from 1973-82 and as acting president of the university from 1976-81. Mr. Packard also served as the first chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine from 1984-91.

The USU Faculty Senate established the Packard Lecture in



1985 to annually honor individuals who have made significant contributions to the military medical community. It is considered among the greatest honors USU's faculty bestows. Several distinguished people have given past Packard lectures, including Nobel Prize winner Joshua Lederberg, Ph.D.; former Surgeon General of the United States, C. Everett Koop, M.D., Sc.D.; and Michael E. DeBakey, M.D.

This publication has been made available through a donation from the Pediatric Immunoglobulin Research Fund and the Henry M. Jackson Foundation for the Advancement of Military **Medicine**



By Francis D. Moore, MD

Moseley Professor of Surgery, Emeritus, Harvard Medical School
Surgeon-in-Chief: Emeritus, Peter Bent Brigham Hospital
Member, Board of Regents, Uniformed Services University of the Health Sciences, Retired
Visiting Board for the Department of Surgery, Uniformed Services University of the Health Sciences
Past President, USU Surgical Associates
Honorary Degree, Uniformed Services University of the Health Sciences

President Zimble, Dean Hemming, Professor Rich, Ladies and Gentlemen. It is a pleasure and a privilege, "once in a lifetime," to be asked to give the David Packard Memorial Lecture at the Uniformed Services University, the School that Mr. Packard led from the fine print of a Congressional Act to a living and breathing University of devoted faculty, eager students, great laboratories, impressive alumni, and a beautiful campus in this previously neglected grove of tall pine trees.

My first personal contact with David Packard was at my first meeting of the Board of Regents of this University, a Board to which I had been appointed by President Ford in 1975. To a small-town Professor from Boston, this Washington adventure, my first meeting of the Board of Regents of this University was most impressive. The Surgeons General of the Army, Navy, Air Force, and Public Health Service were present. All of them males. They were counter-

balanced, however, by the Surgeon General of Army Nurse Corps. She held her own in any slight altercations that might possibly have arisen with the other Surgeons General. There were a few of us civilian doctors present, including the late Carleton Mathewson, and a few staff and faculty, including of course, President Curreri distinguished Wisconsin surgeon, an old friend of mine, and Dean Jay Sanford, also a longtime friend.

In the Chair was David Packard, always quiet, always authoritative, clearly outstripping any others present in his grasp both of the strategy and tactics of building a new medical school.

This was to be the first full-dress, four-year School of Medicine, owned and operated by the Federal Government, in our history, based on 1972 legislation long championed by Congressman F. Edward Hébert of Louisiana, after whom the School is appropriately named.

The impressive nature of this meeting was of course matched by the palatial quarters in which we met. This was a small. dusty, ill-ventilated room, over the corner drugstore in Bethesda. Although we met there several times, I must have suffered a sort of memory blackout, because if you asked me to lead you there today, I would be unable to find it. I also remember with great pleasure the first meeting in our impressive new quarters when the buildings were completed only a very few years later.

It was a delight to be a member of David Packard's Board, and these meetings gave me a lesson - indeed a whole course - in everything pertaining to the use of human, governmental, financial, and institutional resources in designing, constructing, and launching an entirely new institution in our society.

Much as I would like to detail that history, I am going to skip over it, only to mention one of the matters that gave Mr. Packard his greatest pleasure: we came in under budget! We built a new Medical School for less of the taxpayers' money than was budgeted. This was unheard of in government construction projects over the prior 200 years. When we opened our doors to our first students, in September of 1976, Mrs. Moore and I attended that first induction of our first class on a lovely autumn day, with the Naval band playing while we witnessed the gathering of many bright young people in uniform. For the first time we were looking at a group of medical students all of whom were uniformed officers in the Armed Services and who, instead of paying tuition. were being paid a modest salary. Now. the way

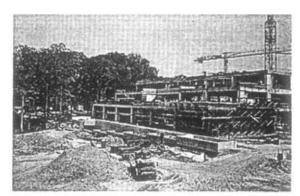
to manage the problem of medical school tuition'

Then, four years later in 1980 we attended the first graduation ceremonies, with many of you here today, as the Board of Regents and the faculty celebrated our first graduating class. It was a pleasure to hear COL Cass Conaway '80 speak here this morning, giving **us** a very incisive view of some of the problems involved in teaching trauma surgery during the present day residency systems.

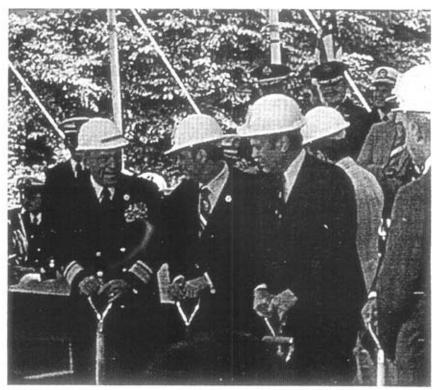
Here were 30 physicians and surgeons, nurtured, educated, and weaned in the wonderful tradition of the Armed Forces of the United States of America, and clearly devoted to serving those objectives without in any way violating either the words or compromising the spirit of their Hippocratic Oath.

Those were years of David Packard, years of memories to cherish now, lessons to relearn every day. Possibly the most important message was that even in the midst of a huge nation with Armed Forces to match, massive supporting institutions, and overpowering bureaucracy, it is in the last analysis individual people who cut through the red tape and make our institutions live and breathe. It is the relationship between individual citizens and the resolution of their sometimes conflicting views of our heritage and mission that keep this Republic on track. It was the leadership of David Packard that created a working unity from the variety of people and opinions confronting this new University. In creating a unified whole, he set an example that others could well follow throughout the nation.

This afternoon I would like to discuss the purposes







Uniformed Services University of the Health Sciences

of this School, at least as I came to understand them, and its evolving mission, adapted to the new kinds of war and new kinds of peace that we face at the turn of the century.

In considering the dangerous tensions amongst the people of this planet at the close of the second millennium, we must acknowledge at the very outset the special importance of the United States and its Armed Forces. Our nation and its Armed Forces - its Uniformed Services - constitute the strongest force for world peace in history. This is a peace quite properly termed Pax Americana. It is peace maintained by truth and strength. The citizens of this nation bear the burden of this preparedness, even though it is often preparedness to solve the problems of others. Our Armed Forces owe an important component of their strength to applied biological science in the form of modem medicine, and to biomedical scientific research forced upon the defense establishment by new kinds of war and new kinds of peace.

The sheer numbers of our Armed Forces and its Medical Corps have been tremendous during periods of war. In 1917 and in 1942 the great mobilizations produced tremendous increase in the Uniformed Services, and at the height of World War II there were about 12 million people in uniform being cared for by about 140,000 physicians and surgeons. That number has come down but not reduced to the dangerous zero figures of the interbellum period of the 1920s. And now I am told by Admiral Sturtz that we have 1,438,562 men and women in uniform and a medical corps of 12,737. This ratio has remained about the same with the number of physicians and surgeons being slightly less than 1 percent of the uniformed services.

The role of the surgeon in battle has always been remarkable, unique, spectacular, dramatic, and the subject of national treasure in song and story. While the surgeon must restore the lightly wounded to battle as soon as possible, the main mission in the eyes of the fighting man, and of the public, has always been to save lives. And this we have done with increasing success. Now a low-velocity, dangerous, wobbling shell fragment in almost any location, even parts of the brain, is manageable. given air transport and sudden surgery. As we have heard this morning, there was always a need to teach military requirements, problems and methods to civilian surgeons, and as has been said so often, civilian advances may not always redound to the benefit of the military and there has been some apprehension about a generation of surgeons who approach some of the problems through the laparoscope. It has been said that "the laparoscope is the enemy of the man with a belly wound." It is only fair to add, and here I am quoting others who know much more than I do about current

trends in surgery that, "the laparoscope is the enemy of the patient with a ruptured aortic aneurysm."

As always, we must adapt the knowledge and mores of civilian surgery to the needs of the military.

To satisfy the needs of the medical corps for an adequate surgical capability, heavy duty support is required as well as large numbers of people, vehicles, planes, facilities, hospitals, nurses, operating rooms, a panoply of armamentarium which sometimes competes with the line of travel, routes, vehicles, and supplies.

This is but one of the many factors that leads to the historic, inevitable, and always smoldering battlefield tensions between the Line and the Medical arm. These tensions go back to the very start of our nation, when Washington spoke of "those rascals, the battalion surgeons." Surprisingly, I must defend Washington on

his use of that terminology. He called the battalion surgeons "rascals," because they were. too neighborly and sympathetic. When they saw a lightly wounded soldier from the next farm up the road, they were awfully apt to send him home on furlough if it was harvest time. This was not too agreeable to the Commander-in-Chief, who was always short of men. These battalion surgeons had probably not

we built a new medical school from less of the harpayers' money than was budgeted flire was unheard of ingover ment construction projects over the prior 200 years."

had an opportunity to attend the USU.

But there were other far more serious sources of tension between the line and the care of the wounded, and they have sometimes been crippling to the medical purpose because the line must always take precedence. Furthermore, for the better part of the 150 years there might have been a justified complaint that for all that medical manpower, we still lost more soldiers to disease than to bullets.

The in-house education of a central corps of physicians to work with the military is of prime importance because it addresses an understanding of the needs of the Armed Forces in controlling disease, and understanding the needs of the line commanders in battle, as well as those injured in line of duty. For these reasons, Dean Sanford arranged field work for the medical students from the very start of the School. The Naval medical students might take a few weeks on a sub, or a carrier. The Air Force medical students, many of them already experienced fliers, would take a few long flights with SAC. And in the Army, a tank

battalion or an infantry regiment might occupy the attention of the medical student for a while.

Triage, a French word for sorting of the wounded, demands a knowledge not only of anatomy, physiology, surgery, and wounds, but also when **to** balance time consuming high-intensity treatment of the severely wounded against getting the lightly wounded back to their units. The military surgeon requires an understanding of the difference between the possible, the feasible, and the advisable. For all of its aspects *so* familiar to surgeons and to the public over the millennia, the care of the wounded is but a single facet of the military life of a physician, and but one aspect of the urgency communicated by Congressman Hébert to the rest of the Congress, in the founding of this School.

To this surgical mission for the military physician is added adaptation **to** the remarkable isolation and strange diseases, often tropical parasites that bedevil our personnel in military posts, the hazards of new epidemics, the epidemiology of newly discovered viruses, the needs of families and children in remote duty stations far from English speaking populations, familiar food or sanitation, and the demands of long flight. To these are added the rehabilitation of the physical and emotional devastation of war, a responsibility shared with the Veterans Administration. These are but a few of the many facets of medicine that are peculiar to the military.

Today our graduates invite an additional expectation. Should a huge national mobilization become necessary again as it was in 1917 and 1942, it will be the graduate: of this School who themselves will be the teachers of those thousands of civilian practitioners who, no matter how capable in their familiar setting, require a special education as they join the military.

Beyond these familiar tasks of this School and its graduates, lie new biomedical horizons defined by biological, chemical and radiation weapons. Both war and peace are changing. The weapons of biological, chemical, and radiation warfare inflict their wounds and lethality by the induction of disease. Research into defense against these weapons must meet challenges only glimpsed a few decades ago. These weapons are sometimes referred to as "weaponized pathogens," be they bacteria, spores, viruses, neurotoxins, or ionizing radiation. If war is to be fought by inducing diseases in addition to blast and flying metal, our medical preparedness lies in the hands of the physicians, scientists, and laboratories of the Armed Services of this School, and the biomedical establishment of the United States. Here is an exact analogy with the metallurgical wonders of turning out rifled artillery at the close of the Civil War, building 12" armor plate for battleships in 1915, or the liberator bomber in 1940. The laboratories of microbiology, chemistry, and toxicology are the foundries of protective armament for the future. Can vaccines actually protect against all strains of Anthrax? How can one ever predict which viruses might be loosed or what neurotoxins released? Can we improve the early



treatment of radiation injury to abort its worst after effects?

Our own generation of physicians and scientists, born early in this century, and now long into retirement, having endured two World Wars and a host of other conflicts, have come to believe that it was nuclear fission that would make weapons of mass destruction possible and wars unthinkable. But now the mind of man and his mastery of Nature have tuned up other modes of destruction more quietly distributed, much more subtle in arrival.

So while war and weapons are changing, we are coming to the realization over these past three decades that the nature of peace is also changing. Peace today asks from our nation an effective armed presence somewhere else, often half a world away, with remarkable frequency. Whether this be in Somalia, the Gulf, East Africa, Grenada, the Balkans, Middle East, or Southeast Asia, we must literally be "prepared for peace." We have neither analyzed nor mastered what is at the heart of these problems of human hatred and malcontent that now fire the engines of war.

It is my conviction that we are witnessing a sea change in the causes of armed conflict during times of international peace. Peace is no longer ruptured by conquest or defense of territory, or by further extension of internal political differences such as ravaged this country in 1861. No longer is it so much threatened by changes in political alliances or Bismarkian European treaties, or by nations seeking independent economic opportunity as brought us the challenge in 1775. Peace no longer rests on a balance of power between heavily armed nations as brought us to war in 1917.

As we turn the millennial calendar, it is instead the deep emotional conflicts of man against neighbor, religious, quasi-religious, ethnic, and cultural. It is these personal and regional conflicts and hatreds, some of them thousands of years old - rather than rampant political neonationalism - that fire dangerous instability at the turn of the century.

We were taught that it was nationalism that fueled terrible world wars. Macro politics. Now it is intense, deep emotion of men, women, and families, that drive the battles. This is virtually tribalism on a vast scale. Micro politics.

Viewing the history of the wars of this century through this particular prism, World War II occupies a central and pivotal position. While at the outset it was seen as an emergent Germany struggling to overcome the constraints of the Versailles Treaty, it turned out to be based also on deep racial and ethnic hatreds, brought racial/ethnic massacres of frightful proportions, and then, through the carpet bombing of cities and the use of atomic weapons came the most extensive civilian

casualties of human history.

Starting out as a war of nations it finally became a

struggle for the dignity and freedom of all mankind including the people both of Germany and Japan. And now come conflicts of ethnicity as in Bosnia, mixed

with religion and languages in the Middle East or Northern Ireland, problems of cultural background, and the gods we worship. It is these deep human emotions that have fired a hundred conflicts over the world since the end of World War II. It is these that demand our continuing strength if the Pax Americana is to protect the world from selfdestruction. Religious wars have always been the most deadly and vengeful. The showing of mercy towards a conquered enemy, so basic to national wars over the millennia. enshrined forever by Abraham Lincoln ... "Charity for all and malice towards none ..." such words are simply not a part of religious wars.

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Neligeous, quasi-religeous, ethnic, and sultural it is these personal and regional conflicts in the best personal and regional conflicts in the base of years old rather than rampant political neonationalism - that fire dangerous instability at the turn of the century."

And yet those words ring in the ears of our generation. It is important for our generation as well as those of our children now in their 50s and 60s, our grandchildren in their 20s and 30s. and our great grandchildren, to understand the true nature of America as a conqueror at mid-century. Standing victorious throughout the world, our own territory free of invasion, we passed the Marshall Plan to use our resources in rebuilding the destruction not only of our friends but of our enemies. We established the Atomic Bomb Commission to help the very same Japanese patients that we had injured only a few weeks before, helping them to recover, get well, and understand the impact on their nation of nuclear fission. as well as the treatment of its victims. It has been popular to speak of the "ugly American" in this last half century. We must make it crystal clear to this nation before our generation passes from the scene, that the words of Lincoln rang out loud and clear over the whole surface of this planet starting in 1945, "With chanty for all and malice towards none."

Now, increasingly, deeply human and dangerous quarrels as well as hidden terrorism are going to require not so much conquest as containment by the Armed Forces of the United States. This containment involves the sudden immersion of our Armed Forces and their medical personnel directly into the civilian populations of neighborhoods at war, and local populations where the role of their own small medical forces have been lost, and the physicians of our Armed Services including our own graduates, add immensely to the effectiveness of our military peacemaking operations by treating the long-standing suffering of the civilian population.

These are civilian populations suffering from endemic diseases and the injuries of war, their own hospitals and physicians destroyed and scattered by civil violence. Talking with President Zimble about this a few days ago, he pointed out that our military physicians, our own graduates are in strange and sometimes primitive environments, not only protecting our soldiers, but also being protected by them so they can bring not only peace but health to ravaged cultures.

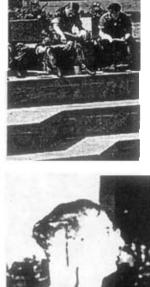
This "new kind of peace" is no longer the antithesis of war. I was rather surprised in fact, to hear some speakers earlier today talk about this as an "interbellum." It is nothing of the sort. It is a special kind of Bello in Pace, possibly best referred to as bellicose peace, that places on the shoulders of the United States and the physicians of our Armed Forces, the obligation of a thrifty but effective defense establishment to cope with restless populations suffering old disease and with new weapons whose main message is

disease induction, whose threat is that of world war, and whose main protection is biomedical science.

Our citizens and taxpayers, as well as Congressmen and Senators opposed to the development of frightening weapons, must understand that research in the field of biological, chemical, and toxicological warfare cannot always differentiate between the knowledge and scientific methods required for defense, from that required for offense. We cannot build defenses without studying the offenses and newly weaponized pathogens that might be used against us. Earlier today Dr. Eisema made the metaphor that if we play with fire we must be ready to be burned. I would tend to restate it the other way. We are surely going to get burned, and we must therefore learn how to play with fire.

The entire biomedical research establishment of the United States is involved in forging our protective armor. This University, the laboratories of the Army, th Navy, the NIH and the Public Health Service, the Center for Disease Control, and our Universities. Strange and frightening new viruses are enough of a threat; now there is the threat of their intentional induction.

In 1976 as we began to enroll students in this University, we were apprehensive that many of our newly trained officers might leave the military for civilian life following this education. Clearly we misunderstood the loyalty of our own students and their sense of mission. I, for one, as we admitted our first class, learned something about the tradition of military medicine in this country. We have many remarkable medical families in the military history of the United





States, just as we have in civilian life. Most of the cities of this country are proud of their old medical families whose names are synonymous with public service. In Boston we have the Warrens, the Homans, the Cheevers, the Richardsons. In Philadelphia, the Shippens, Morgans, Benjamin Rush, and the Rhoads family. In New York, Valentine Mott. as well as Allen Whipple and Halsted. And in Baltimore, Halsted, Osier, Welch, and Cushing. Let's not forget about the McGuires and Horsleys of Richmond. old families in the Confederacy who held up the banner of excellence in the care of their wounded in the Civil War.

As we began to look over our entering students in the military, applying for admission to this School, and studied their backgrounds, I realized that many were the children, then about 20 or 21 years of age, now about to turn 40, of many families that claimed, not decades, but generations of service in the military medical corps of the Army and Navy in their ancestry, going back to the Revolution and even to the French and Indian Wars!

This Medical School, as it grows its traditions, will enhance and enshrine these careers and families in our military medical history. Whether or not these long-devoted families were responsible for own special esprit de corps, our fears of disenrollment were never realized. Our graduates have remained with their military careers in the overwhelming majority of instances. As of last year we had graduated 2,470 students as military medical officers of the Armed Forces of the United States of America. We can look proudly to the fact that over 2,200 of them are still in service! In fact, they constitute 17 percent of our Armed Forces Medical Corps at this time.

This is a triumph for David Packard. Congressman Hébert. Jay Sanford, Norman Rich, his fellow Professors, and the entire faculty and staff of this School, many of whom have been here since the beginning. As the Armed Forces budget is reduced and some officers are being released from duty, we also share in the fact that some of our graduates who have devoted themselves to a military career are learning that they are no longer needed. I am told by President Zimble that the Armed Forces hospitals are reducing their beds by about 25 percent and the Department of Defense is reducing its uniformed personnel by about 33 percent.

While those physicians and surgeons may, some to their dismay, be leaving the service to which they have devoted their loyalty, they leave behind them an impact, a tradition, an imprint, that will never be lost. And speaking of families, we know that the Admissions Office here at the USU. starting just about now, right now, after almost two decades of graduates' careers, will begin to see some applicants in whose background parentage they will find familiar names with medical

degrees from our own University, the names of a mother or father, or both • new young people following in the footsteps of their parents and now seeking admission here as they seek interviews in • of all places • the Packard Building.

During these years of bellicose peace, the entire medical establishment of the Armed Forces must reemphasize to the Congress the need for a central, lasting, source of continuity and stability such as is provided by this University, not only for the care of the wounded, but also for our protection against disease-inducing weapons.

Now as we celebrate two decades of the work of this School and the continued devotion of its faculty and graduates, we memorialize David Packard, who by his own career moving from Deputy Secretary of Defense to President of this School, and Board Chairman, we can look up from our work for just a moment. But still we must pull on our oars because the job that has been done required redoing and refocusing continuously, if Pax Americana is to endure.

In these last couple of

"as of last year we had graduated 2,470 students as military medical officers of the armed forces of the united states of the united states of the united states of the united states of the wally to the fact that over 2,200 of them are still in the service."

days President Zimble has brought us the wonderful news that now for the first time the Congress and the Department of Defense have joined forces in giving us a solid forward budget for the next five years and assuredly thereafter.

We are in a period of fragile peace, a bellicose peace, when military preparedness is a first concern of this country. Despite the end of the Cold War we need a thrifty, well-balanced military force, one strong in clinical medicine and biomedical sciences. The mood and attitude of this School preparing for the military needs of both peace and war will, by its impact on the people of this country help support the concept of preparedness in a period of notoriously hazardous peace. A peace, during which the Armed Forces permit this nation to contain the threats of worldwide unrest, and where the hazard of massive religious war remains as real as it has been since the Crusades.

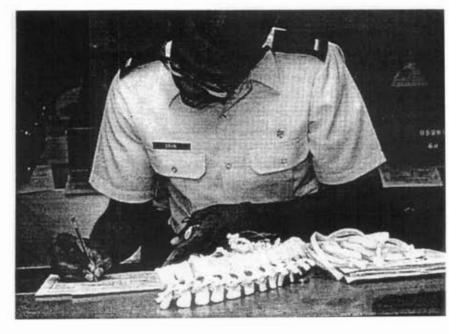
Before closing, I would like to take this opportunity to mention two other members of this faculty with whom I have worked now for about 24 years, and to



whose wisdom and tenacity I ascribe a large share of the success of the School.

First is the late Jay Sanford, our first Dean. I knew him first as an intern at our Hospital working under Dr. George Thorn about 40 years ago. And then when he came here as Dean following a very successful academic career in medical microbiology. He set a high standard. And I am not referring to the height to which he threw the ropes over the buildings so he could scale them up and down (followed by his more hesitant medical students) maintaining with a sense of both vigor and humor the physical fitness and athleticism which is an intrinsic part of all military life. He also gathered a wonderful faculty around him, provided a wisely structured curriculum, and the glue that kept this whole sprawling complex together. Sprawling not only from the Naval Hospital a half a mile away but extending to Walter Reed, Malcolm Grow, Wilford Hall, and throughout the world to Frankfurt, Tokyo, Morocco, Cairo....and many other places I may have overlooked. These are the nations and the places where our Armed Forces hospitals and laboratories have taught our students and residents and where our graduates are becoming the commanding officers. We shall always cherish the memory of Jay Sanford, and send our best wishes to his family. We welcome Lorrie Sanford here today. At the same time that we think of David Packard, Mrs. Packard. and welcome Mrs. Spangenberg here today, we also think of Jay Sanford and his family.

We also celebrate today the long service of our first Professor of Surgery, Norman Rich. Many medical schools have appointed a first Professor of Surgery who put the stamp of his personality, his dedication and his skill on the whole history of that School. Clearly Halsted of Hopkins, Phemister of Chicago, DeBakey of



Baylor, Nafziger of San Francisco, Longmire of UCLA and many others, epitomize this reality.

For me, recently retired from an ancient faculty, that person was John Warren. He was appointed our first Professor of Surgery 216 years ago in 1782, and remained in that position until his son took over in 1820. Very few people realize that the first Professor of Surgery at Harvard Medical School had never gone to medical school. At that time about 60 percent of the physicians and surgeons in the Colonies had learned by the apprenticeship system. But his work had the stamp of the perfect physician and scholar, a gentleman, a teacher, and above all, a surgeon devoted to the welfare of his patients that included of course many wounded soldiers in the Revolution. They were cared for in the American Hospital in Boston, no longer in existence, where George Washington appointed John Warren the Chief Surgeon. He then looked after the wounded of the War of 1812. And his son. John Collins Warren, wrote that classic article on the use of ether anesthesia for the care of the wounded in the War of the Rebellion.

With that as introduction, I enjoy greeting our Professor of Surgery and Chairman of Surgery since 1977, Norman Rich. He is the John Warren of the Uniformed Services University. We also greet his wife, Lois, who has been so supportive in his challenging job' of building a new clinical service in a new Medical School.

Norman Rich does his work so quietly, and with such modesty, that he is probably embarrassed by my even bringing this up. But while we are here today, celebrating David Packard, we can think of those two very strong appointments he made right at the beginning, Jay Sanford, and Norman Rich. I am sure there are many others here today in medicine, microbiology, physiology anatomy, and the other clinical and scientific fields that have done the same sort of work and deserve the same recognition. I mention Jay Sanford and Norman Rich because they are the ones with whom I came into closes personal contact.

To all of you here, the students. faculty, graduates. men and women, your wives and husbands, I give my greeting. One of the unique privileges of my increasingly long career has been working with the Uniformed Services University of the Health Sciences, and the Hébert School of Medicine. I am most especially grateful for the privilege of working with and learning from Mr. David Packard.

I wish to acknowledge the assistance that I have received from the staff and faculty of the School, especially Admiral Sturtz and Norman Rich, in gathering some of the data I have mentioned in this lecture. and some of the photographs I have been privileged to show.





Top photo, from left, USU President James Zimble; acting Assistant Secretary of Defense (Health Affairs) Gary Christopherson; Mrs. Ruth Spangenberg; Board of Regents Chair Lonnie Bristow; Maryland Rep. Constance Morella; Army Surgeon General Lt. Gen. Ronald Blanck, Val Hemming, dean of the F. Edward Hébert School of Medicine; and Faye Abdellah, dean of the Graduate School of Nursing, applaud following the David Packard plaque unveiling. Above, Doctor

Zimble and Mrs. Spangenberg prepare to cut the ribbon during the building dedication.

Dedication of David Packard Hall

The Uniformed Services University of the Health Sciences honored the late David Packard, Deputy Secretary of Defense from 1969-71, by renaming Building A David Packard Hall during a ceremony March 23. Mr. Packard was the university's first Board of Regents chair from 1973-82 and acting president from 1976-81. He also was the first chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine from 1984-91. Mr. Packard died in 1996.

Mrs. Ruth Spangenberg, a long-time friend, represented the Packard family at the dedication ceremony. Packard Hall houses the offices of the university's president, and deans of the F. Edward Hébert School of Medicine and Graduate School of Nursing.

Mr. Packard co-founded the Hewlett-Packard Corporation in 1938 with his Stanford University classmate, William Hewlett. With an initial investment of \$538, they created a business with 100,000 employees and revenue of \$31 billion in 1995.

Coinciding with the ceremony, Francis Moore, M.D., Moseley Professor and chairman emeritus of the Department of Surgery at Harvard University, delivered this year's Packard Lecture. Recognized as a pioneer in mass casualty advanced trauma treatment, Doctor Moore was a member of the university's Board of Regents from 1976-83, and he has been a member of USU's Visiting Board and a surgical associate since 1983.

APPENDIX B

Selected Examples of Billeted and Adjunct Members of USU Departments and Programs Who Received Special Recognition During Fiscal Year 1998.

"The atmosphere at USU allows motivated people to reach for their potential."

Maureen Hood, USU Department of Radiology and Nuclear Medicine, Fiscal Year 1998.

Selectees for Who's Who in America.

Five faculty members are mentioned in the most recent edition of Who's Who in America: Val Hemming, M.D., Dean of the F. Edward Hebert School of Medicine and Professor of Pediatrics; Harvey Pollard, M.D., Ph.D., Chair and Professor, Department of Anatomy and Cell Biology; Edmund Howe, M.D., J.D., Professor of Psychiatry; William Drucker, M.D., Professor of Surgery; and, Robert Ursano, M.D., Chair and Professor, Department of Psychiatry.

Anatomy and Cell Biology

A paper co-authored by three faculty members in the Department of Anatomy and Cell Biology for the <u>Proceedings of the National Academy of Sciences</u>, (Volume 95, pages 340-345, January 1998) was republished in the February 12, 1998 edition of <u>Nature</u> (Volume 391). The article by **Ignacio Provencio**, **Ph.D.**, **Guisen Jiang**, **PhD.**, **and**, **Mark Rollag**, **Ph.D.**, was titled "Melanopsin: An Opsin in Melanophores, Brain, and Eye."

Anesthesiology.

Major Jeremy Blanchard, Medical Corps, U.S. Army, a critical care fellow in the Department of Anesthesiology, received the 1998 Educational Scholarship Award from the Society of Critical Care Medicine. Major Blanchard was recognized for his original research in "Cytokine Regulation of Center Nervous System Inflammation," which occurred at USU under the guidance of Major Geoffrey Ling, Medical Corps, U.S. Army, Director of Critical Care in Anesthesiology.

Major Jeffrey Nary, MC, U.S. Air Force, Assistant Professor, co-authored a paper that appeared in the December 1997 edition of <u>Anesthesiology</u> (Volume 87, No. 6). The paper was titled "Experimental Subarachnoid Hemorrhage in Rats." Major Nary is also a staff anesthesiologist at the Malcolm Grow U.S. Air Force Medical Center, Andrews Air Force Base, Maryland.

Continuing Education for Health Professionals.

Captain Laura Omer, NC, U.S. Navy, Senior Executive Director of USU's Office of Continuing Education for Health Professionals, was chosen to serve on the Society of Medical College Directors' Nominating Committee. Other committee members include: John Kues, M.D., Assistant Dean, University of Cincinnati; Joyce Fried, Director of Continuing Medical Education at the UCLA School of Medicine; and, Gloria Allington, Director of CME at the University of Miami, Florida.

Dermatology.

Colonel Leonard Sperling, Chair and Professor, Department of Dermatology, was a course director or speaker in four different sessions at the 1998 American Academy of Dermatology Annual Meeting in Orlando, Florida. He was also a speaker at the AAD Summer Meeting in Chicago and the American Society of Dermatopathology Annual Meeting in Denver, Colorado. In addition, Colonel Sperling served as a visiting professor and lecturer at the University of Virginia in Charlottesville, Virginia; the University of Louisville in Louisville, Kentucky; the Washington Hospital Center, Washington, D.C.; and, the International Hair Research Meeting in Washington, D.C.

Tom Darling, M.D., Ph.D., has been appointed as an Assistant Professor of Dermatology and the Director of the Sulzberger Laboratory for Dermatologic Research. As Director of the Sulzberger Laboratory, Dr. Darling will be responsible for organizing all bench research projects within the Department of Dermatology; he has special interest and experience in blistering diseases of the skin.

The Department of Dermatology sponsored the 2nd Annual Sulzberger Lecture in December 1998. The lecture was presented **by Dr. Samuel Moschella, Professor (Emeritus) at Harvard University** who is an internationally known figure in dermatology.

Family Medicine.

An article, co-authored by two adjunct faculty members in the Department of Family Medicine, was recognized as the most outstanding clinical article published in <u>American Family Physician</u> in 1996. **Lieutenant Colonel Eron Manusov, Medical Corps, U.S. Air Force., and Wade Lillegard, M.D.,** received the Walter H. Kemp Award for their work. The article was titled "Evaluation of Pediatric Foot Problems."

Major Cindy Barter, Medical Corps, U.S. Army, Assistant Professor, Department of Family Medicine, was the physician winner of the Award for Excellence in Patient Education from the publication, <u>Patient Care</u>. Dr. Barter transferred from Fort Belvoir, Virginia, where she was the Medical Director of the Wellness Center.

Lieutenant Commander Evelyn Lewis, Medical Corps, U.S. Navy, Assistant Professor and Director of Undergraduate Programs, Department of Family Medicine, and Acting Vice President for Minority Affairs contributed to a book written by more than 150 physicians titled <u>Health & Healing for African-Americans</u>. The publication, designed for the average health care consumer, contains home remedies, prevention strategies and tips on top health care concerns. The foreword was written by former U.S. Surgeon General Joycelyn Elders, M.D.

The Graduate School of Nursing.

Faye Abdellah, Ed.D., Sc.D., R.N., Dean of the Graduate School of Nursing presented the Richard A. Kern Award Lecture at the 105th meeting of the Association of Military Surgeons of the United States (AMSUS) on November 10, 1998, in San Antonio, Texas. Established in 1979, this award honors Rear Admiral Richard A. Kern, a past president of the association. AMSUS annually presents the award to an individual who has made an outstanding contribution in the field of federal medicine for a lecture on federal medicine. Chartered in 1903 by Congress, AMSUS is composed of more than 12,000 members - health professionals from the Army, Air Force, Navy, U.S. Public Health Service, and the Department of Veterans Affairs. Dr. Abdellah also published "Managing the Challenges of Role Diversification in an Interdisciplinary Environment," in Military Medicine, 162, 1-6; and, she was appointed to the Editorial Board of Military Medicine for a four-year term.

Colonel Quanetta T. Edwards, NC, USAF, Assistant Professor, Nursing Research Department, was selected as the 1998 Scientific Award Winner of the 14th Annual Education Conference, "Creating our Future through Service and Science," a clinical, scientific, and networking conference for Nurse Practitioners sponsored by the Uniformed Nurse Practitioner Association. The Conference was held from 15-20 November, in Austin, Texas. Colonel Edwards' current research is titled, "Health Behavior of Prostate Cancer Screening Among African-American Men in a Military Community." Her study will use quantitative and qualitative methods, and will obtain preliminary data on African-American men's health behavior and potential factors that may affect their screening intent.

Carol Ledbetter, Ph.D., RNc, CS, FNP, Associate Professor and Chair, Department of Nurse Practitioner, Graduate School of Nursing, was selected as the 1998 Distinguished Alumnus by the University of Texas Health Science Center School of Nursing. The award was presented to Dr. Ledbetter during the May 1998 graduation in San Antonio, Texas. Dr. Ledbetter was also appointed as a Charter Member to the Air Force Nursing Research Council; the Council is responsible for Goal 6, Employ and Integrate Technology and Research, of the Total Nursing Force Strategic Plan. In addition, Dr. Ledbetter was appointed to the Air Force Medical Service Officer Warskill Competencies for Family Nurse Practitioners Taskforce.

Medical and Clinical Psychology.

Willem Johan Kop, Ph.D., Research Assistant Professor in the Department of Medical and Clinical Psychology, was named the 1998 winner of the American Psychosomatic Society's Early Career Award for his research on acute and chronic psychological risk factors for coronary syndromes. He received the award at the society's annual meeting in March.

Medicine.

Major Mark Haighney, Medical Corps, U.S. Air Force, Department of Medicine, received the 1998 Early Career Development Award from the American Federation for Medical Research at its Biomedicine '98 Meeting in Washington, D.C., in May. The award consisted of a \$15,000 grant, which may be renewed year-by-year for an additional two years pending a satisfactory annual progress report.

Matthew Pollack, M.D., Professor, Department of Medicine, and Lieutenant Commander Christopher A. Ohl, Medical Corps, U.S. Navy, Department of Medicine, were co-authors of a chapter on "Dual Effects of LPS Antibodies on Cellular Uptake of LPS and LPS-Induced Proinflammatory Functions," published in The Journal of Immunology.

Neurology.

Lieutenant Commander Gwendolyn Ford, MC, U.S. Navy, Department of Neurology, earned the Defense Meritorious Service Medal for the period August 24, 1995 to June 30, 1998. As Deputy Director of the department's Clinical Support Division, she supervised the neurological education of 700 medical and graduate students rotating through four metropolitan Washington, D.C. hospitals and 13 military teaching hospitals in the United States. Additionally Ford served as the Site Coordinator for Neurology Programs at the National Naval Medical Center.

Colonel Bahman Jabbari, MC, U.S. Army, Chair of the Department of Neurology, presented the Department of Defense's Epilepsy Surgery Program (located at the Walter Reed Army Medical Center) to the International Epilepsy Surgery Conference in June of 1998.

Major Ajay Verma, Medical Corps, U.S. Army, Assistant Professor, Department of Neurology, co-authored "Liquid Chromatographic Assay of Dityrosine in Human Cerebrospinal Fluid," published in the <u>Journal of Chromatography B (Biomedical Sciences and Applications)</u>.

Obstetrics and Gynecology.

Captain William Haffner, Medical Corps, U.S. Public Health Service, Professor and Chair, Department of Obstetrics and Gynecology, was the editor of Obstetric, Neonatal. and Gynecologic Care, published by the American College of Obstetricians and Gynecologists, under a contract with the Indian Health Service. The publication provides a practical approach to women's health care in the remote and frontier settings of the Indian Health Service Communities. It also serves as a guide to care for family physicians and clinical nurses in the Indian Health Service and Tribal Programs.

Pediatrics.

Captain Ildy Katona, Medical Corps, U.S. Navy, Professor and Chair, Department of Pediatrics, was appointed as President of the American Board of Pediatrics Sub-Board on Pediatric Rheumatology. As president, Captain Katona is primarily responsible for setting the standards by which physicians who are already certified members of the American Board of Pediatrics are tested to become members of the sub-board.

Val Hemming, M.D., Dean, SOM, and Professor, Department of Pediatrics, co-authored an article in <u>Patient Care (The Journal for Primary Care Physicians)</u> on "Bracing for the Cold and Flu Season." Dr. Hemming also co-authored the article, "Development of a Humanized Monoclonal Antibody (MEDI-493) with Potent In Vitro and In Vivo Activity Against Respiratory Syncytial Virus," published in the Journal of Infectious Diseases.

Pharmacology.

Three faculty members in the Department of Pharmacology, **Brian M. Cox, Ph.D., Professor and Chair; Beata Buzas, Ph.D., Research Assistant Professor; and, John Rosenberger, a Research Chemist,** co-authored an article in the Journal of <u>Neurochemistry</u> (Volume 70, No. 1, 1998). The article was titled "CA2+ Calmodulin-Dependent Transcriptional Activation of d-Opioid Receptor Gene Expression Induced by Membrane Depolarization in NGIO8-15 Cells."

James B. Phillips, Jr., Ph.D., and Brian M.Cox, Professor and Chair, were published in the <u>Journal of Neuroscience Methods</u>. 75 (1997). Their paper was entitled, "Release of endogenous glutamate and gamma amniobutync acid from rat striatal tissue slices measured by an improved method of high performance liquid chromatography and electrochemical detection." Phillips successfully defended his thesis and earned his Ph.D. Degree in Pharmacology on September 19, 1997. He accepted a position in the Division of Neuroscience, Department of Neuropharmacology, at the Walter Reed Institute of Research.

Preventive Medicine and Biometrics.

An editorial written by **Itzhak Jacoby**, **Ph.D.**, and **Gregg Meyer**, **M.D.**, appeared in the September 2, 1998, edition of the <u>Journal of the American Medical Association</u>. The editorial, "Creating an Effective Physician Workforce Marketplace," discusses how a rapidly changing health care system has resulted in enhanced cost consciousness, curricular reform for practicing in a managed care setting and an increased focus on the economics of delivering health care. It also deals with the challenge of building a more functional market for physician services. Dr. Jacoby is a Professor in Preventive Medicine and Biometrics, and Dr. Meyer, formerly with the USU Department of Medicine, is the Director of the Center for Quality Measurements and Improvement, Agency for Health Care Policy and Research, in Rockville, Maryland.

Colonel John Gardner, MC, U.S. Army, Assistant Professor in Preventive Medicine and Biometrics (PMB); Mr. Peter Stavish, Assistant Dean, Admissions and Academic Records; and, Susan Harmon, formerly with PMB, wrote an article published in the May, 1998 issue of Military Medicine that traces USU's history, programs and critical role in military medical education. It is titled, "The Uniformed Services University of the Health Sciences, F. Edward Hebert School of Medicine: Status of the Federal Medical School after 25 Years."

Psychiatry.

In conjunction with the Department of Psychiatry's Center for the Study of Traumatic Stress, two department faculty members, Robert Ursano, M.D., Professor and Chair, and Lieutenant Colonel Ann Norwood, MC, U.S. Army, Assistant Professor (USU Class of 1981), made presentations at the National Disaster Medical System's April 1998, meeting in Denver, Colorado. At the request of the National Institutes of Health and the American Psychiatric Association, they also met with a delegation of Russian doctors on disaster psychiatry. This delegation was arranged by Vice President Gore as part of his initiative to further collaborations between the United States and Russia. Under the leadership of Dr. Ursano and LTC Norwood, a consensus conference was also completed by the Center for the Army on the research requirements of the Service in the area of family violence. Ursano and Norwood also led

consultative support from the Center to the mental health response teams that helped with the recovery operations following the April 1998 tornadoes in Nashville, Tennessee.

Radiology and Nuclear Medicine.

James G. Smirniotopoulos, M.D., Professor of Radiology and Neurology, and Chair, Department of Radiology and Nuclear Medicine, collaborated on an article entitled, "Neuroimaging-Autopsy Correlations in AIDS" for publication in the <u>Neuroimaging Clinics of North America</u> magazine.

Lieutenant Colonel Gael Lonergan, Medical Corps, U.S. Air Force, Assistant Professor and Chief of Pediatric Radiology, Department of Radiology and Nuclear Medicine, was named the new Director of the Radiologic Pathology Course at the Armed Forces Institute of Pathology. This six-week course, considered an essential element in diagnostic radiology residency education, is attended by all U.S. military radiology trainees, nearly all civilian radiology residents from the United States and Canada, and many international radiology experts.

Maureen Hood, the Clinical Research Coordinator for Magnetic Resonance (MR) in the USU Department of Radiology and Nuclear Medicine, was named an Outstanding Young Woman of America for 1997 by the Outstanding Young Americans Organization. Hood has been at USU since October of 1986. Her responsibilities include clinical research protocol design and implementation; patient recruitment, care and monitoring; and MR scanning. She also assists in teaching MR imaging principles and safety to USU students and to radiology residents at the National Naval Medical Center. The Magnetic Resonance Research Division's primary area of research is in cardiovascular MR; the Division's goal is to safely screen patients for cardiovascular diseases to allow early diagnosis and therapeutic intervention. Hood recently won an award for scientific merit from the Radiological Society of North America for her presentation "Chemical Shift Imaging: the Artifact and Clinical Tool Revisited." She is a member of the Policy Board of the Section for Magnetic Resonance Technologists, which is part of the International Society for Magnetic Resonance in Medicine.

Surgery.

A paper co-authored by **Department of Surgery Professors Peter Soballe, M.D., and William Drucker, M.D.,** titled, "Electric Cautery Lowers the Contamination Threshold for Infection of Laparotomies," appeared in the April 1998 edition of The American Journal of Surgery (Volume 175).

An article by members of the Department of Surgery's Center for Prostate Disease Research was published in the September 1998 issue of Military Medicine. Major John Bauer, MC, U.S. Army; Roger Connelly, MSc; Isabell Seterhenn, M.D..; Shiv Srivastava, Ph.D.; Colonel David G. McLeod, MC, U.S. Army; and, Lieutenant Colonel (P) Judd Moul, MC, U.S. Army, collaborated in the publication of "Statistical Modeling Using Preoperative Prognostic Variables in Predicting Extracapsular Extension and Progression after Radical Prostatectomy for Prostate Cancer."

Lieutenant Colonel David Burris, Medical Corps, U.S. Army, Chief, Division of Surgical Research, Department of Surgery, earned the Raymond H. Alexander Award from the Eastern Association for the Surgery of Trauma. The Association also selected his paper, "Controlled Resuscitation for Uncontrolled Hemorrhagic Shock," as the best presentation at its 11th Scientific Assembly. Burris is a 1982 graduate of USU.

Lieutenant Colonel (P) Judd Moul, Medical Corps, U.S. Army, Associate Professor, Department of Surgery and Colonel David G. McLeod, Medical Corps, U.S. Army, Chief of Urology, Walter Reed Army Medical Center and Adjunct Professor, USU Department of Surgery, both members of the Center for Prostate Disease Research, received a \$250,000 grant from Howard University. They will use the grant in their ongoing research to determine if there is a genetic marker for prostate cancer in African-American men.

Lee E. Smith, M.D., USU Clinical Professor of Surgery, was named President of the American Society of Colon and Rectal Surgeons for 1998-99. Smith is also the Director, Section of Colon and Rectal Surgery, at the Washington Hospital, Washington, D.C., and Clinical Professor of Surgery at the George Washington University School of Medicine, Washington, D.C. He has served as a Surgical Consultant to the State Department for 15 years, the White House for 20 years, and the Congress for nine years.

J. Leonel Villavicencio, M.D., Professor, Department of Surgery, was the co-author of a new book, <u>Surgical Management of Venous Disease</u>.